Collected Works of

Francis Bacon

DELPHI CLASSICS

Series Eight

The Collected Works of

FRANCIS BACON

(1561-1626)

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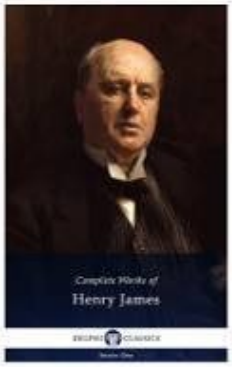

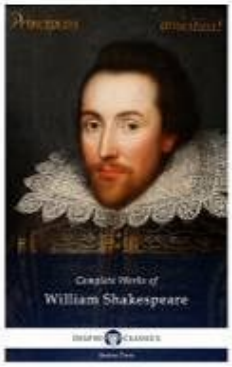

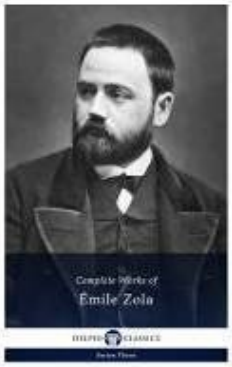

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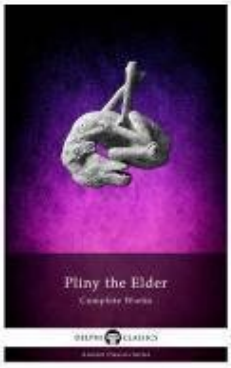

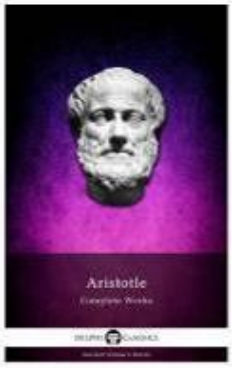

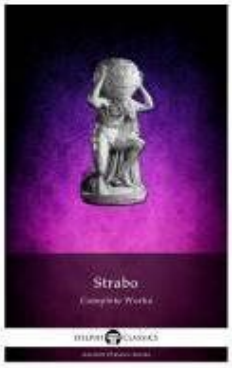

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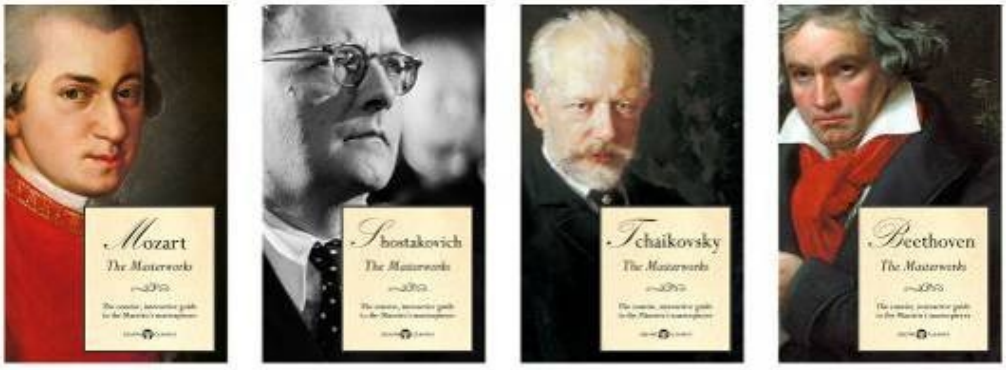

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The Collected Works of

FRANCIS BACON

By Delphi Classics, 2017

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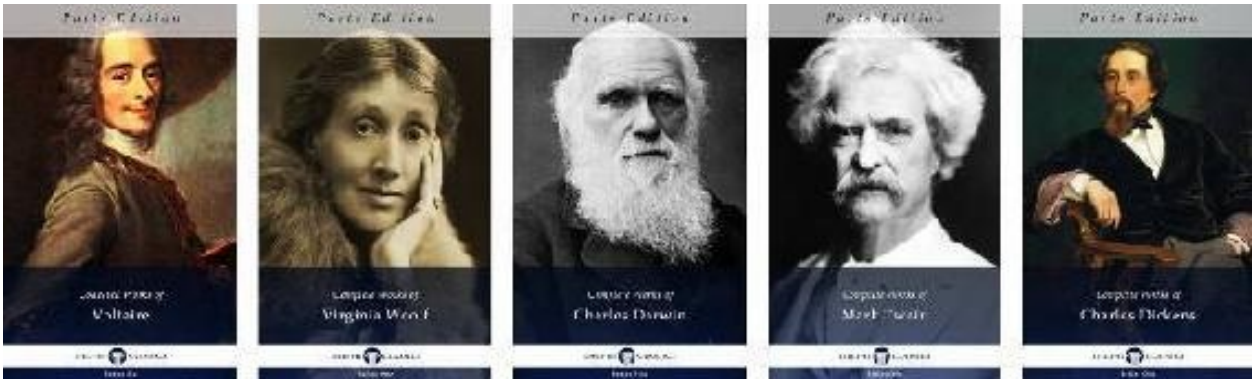

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The Books

'York Water Gate and the Adelphi from the River by Moonlight' by Henry Pether, c. 1850 — Francis Bacon was born on 22 January 1561 at York House near the Strand in London. The house no longer stands.

The Italianate York Water Gate – the entry to York House, built about 1626, the year of Bacon's death

Bacon as a boy

Bacon as a young man. The inscription around his head reads: Si tabula daretur digna animum mallem, "If one could but paint his mind"

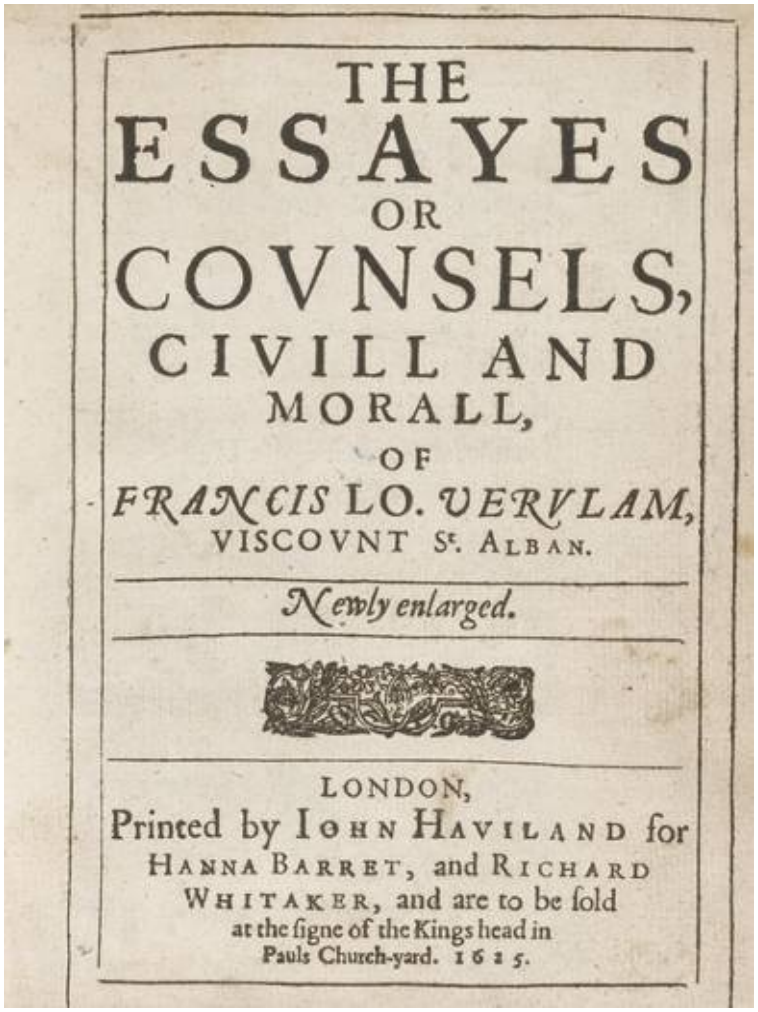
The Essays or Counsels, Civil and Moral

THIRD EDITION

Bacon's first book, *Essayes* initially appeared in 1597, offering 10 essays written in a wide range of styles, from the plain and unadorned to the epigrammatic. These works concern topics drawn from both public and private life, analysing the topics systematically from a number of angles, assessing one argument against another. A much-enlarged second edition appeared in 1612 with 38 essays. A third edition, under the title *Essayes or Counsels, Civill and Morall*, was published in 1625 with 58 essays.

Though Bacon considered the *Essays* "but as recreation of my other studies", he received high praise from his contemporaries, some going as far as crediting him for having invented the essay form. Later researches have identified the extent of Bacon's borrowings from the works of Montaigne, Aristotle and other writers. Nevertheless, the *Essays* have retained high repute for establishing a firm foundation of English criticism.

Bacon's genius as a phrase-maker appears to great advantage in the later essays. In *Of Boldness* Bacon writes, "If the Hill will not come to Mahomet, Mahomet will go to the hill", the earliest known appearance of that proverb in print. The phrase "hostages to fortune" appears in the essay *Of Marriage and Single Life* – again the earliest known usage. Aldous Huxley's book *Jesting Pilate* took its epigraph, "What is Truth? said jesting Pilate; and would not stay for an answer", from Bacon's essay *Of Truth*.

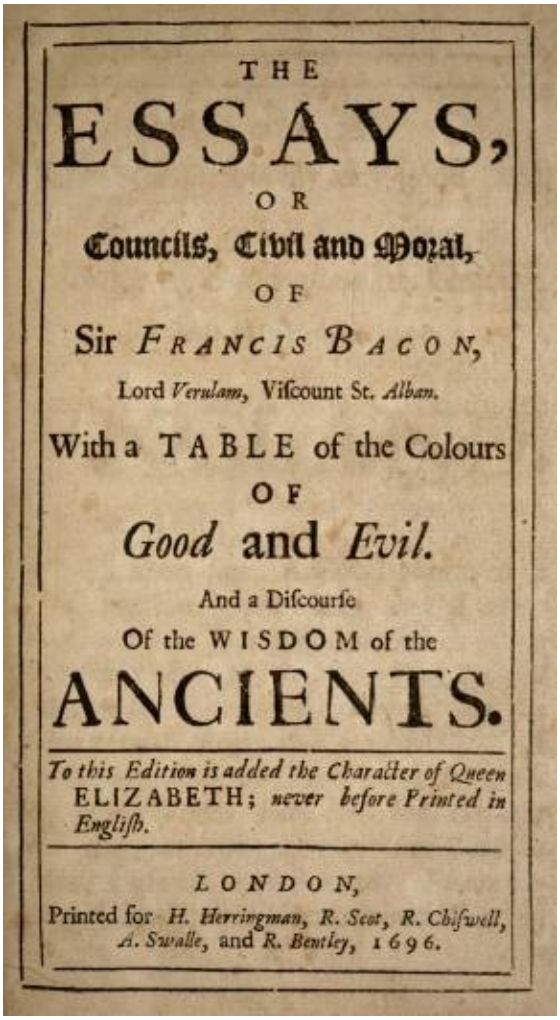


THE
ESSAYES
OR
COVNSELS,
CIVILL AND
MORALL,
OF
FRANCIS LO. *VERVLAM*,
VISCOVNT S^t. ALBAN.

Newly enlarged.

LONDON,
Printed by IOHN HAVILAND for
HANNA BARRET, and RICHARD
WHITAKER, and are to be sold
at the signe of the Kings head in
Pauls Church-yard. 1625.

The 1625 title page


THE
ESSAYS,
OR
Councils, Civil and Moral,
OF
Sir FRANCIS BACON,
Lord Verulam, Viſcount St. Alban.
With a TABLE of the Colours
OF
Good and Evil.
And a Diſcourſe
Of the WISDOM of the
ANCIENTS.
To this Edition is added the Character of Queen ELIZABETH; never before Printed in Engliſh.
LONDON,
Printed for H. Herringman, R. Scot, R. Chiſwell, A. Swalle, and R. Bentley, 1696.

1696 title page

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Of Fame

A Glossary of Archaic Words and Phrases

Early portrait of Bacon

TO

THE RIGHT HONORABLE

MY VERY GOOD LORD

THE DUKE OF BUCKINGHAM

HIS GRACE, LORD

HIGH ADMIRAL OF ENGLAND

EXCELLENT LORD: SALOMON saies; A good Name is as a precious oyntment; And I assure my selfe, such wil your Graces Name bee, with Posteritie. For your Fortune, and Merit both, have been Eminent. And you have planted Things, that are like to last. I doe now publish my Essayes; which, of all my other workes, have beene most Currant: For that, as it seemes, they come home, to Mens Businesse, and Bosomes. I have enlarged them, both in Number, and Weight; So that they are indeed a New Worke. I thought it therefore agreeable, to my Affection, and Obligation to your Grace, to prefix your Name before them, both in English, and in Latine. For I doe conceive, that the Latine Volume of them, (being in the Universall Language) may last, as long as Bookes last. My Instauration, I dedicated to the King: My Historie of Henry the Seventh, (which I have now also translated into Latine) and my Portions of Naturall History, to the Prince: And these I dedicate to your Grace; Being of the best Fruits, that by the good Encrease, which God gives to my Pen and Labours, I could yeeld. God leade your Grace by the Hand. Your Graces most Obliged and faithfull Servant, FR. ST. ALBAN

Of Truth

WHAT is truth? said jesting Pilate, and would not stay for an answer. Certainly there be, that delight in giddiness, and count it a bondage to fix a belief; affecting free-will in thinking, as well as in acting. And though the sects of philosophers of that kind be gone, yet there remain certain discoursing wits, which are of the same veins, though there be not so much blood in them, as was in those of the ancients. But it is not only the difficulty and labor, which men take in finding out of truth, nor again, that when it is found, it imposeth upon men's thoughts, that doth bring lies in favor; but a natural, though corrupt love, of the lie itself. One of the later school of the Grecians, examineth the matter, and is at a stand, to think what should be in it, that men should love lies; where neither they make for pleasure, as with poets, nor for advantage, as with the merchant; but for the lie's sake. But I cannot tell; this same truth, is a naked, and open day-light, that doth not show the masks, and mummeries, and triumphs, of the world, half so stately and daintily as candle-lights. Truth may perhaps come to the price of a pearl, that showeth best by day; but it will not rise to the price of a diamond, or carbuncle, that showeth best in varied lights. A mixture of a lie doth ever add pleasure. Doth any man doubt, that if there were taken out of men's minds, vain opinions, flattering hopes, false valuations, imaginations as one would, and the like, but it would leave the minds, of a number of men, poor shrunken things, full of melancholy and indisposition, and unpleasing to themselves?

One of the fathers, in great severity, called poesy vinum daemonum, because it fireth the imagination; and yet, it is but with the shadow of a lie. But it is not the lie that passeth through the mind, but the lie that sinketh in, and settleth in it, that doth the hurt; such as we spake of before. But howsoever these things are thus in men's depraved judgments, and affections, yet truth, which only doth judge itself, teacheth that the inquiry of truth, which is the love-making, or wooing of it, the knowledge of truth, which is the presence of it, and the belief of

truth, which is the enjoying of it, is the sovereign good of human nature. The first creature of God, in the works of the days, was the light of the sense; the last, was the light of reason; and his sabbath work ever since, is the illumination of his Spirit. First he breathed light, upon the face of the matter or chaos; then he breathed light, into the face of man; and still he breatheth and inspireth light, into the face of his chosen. The poet, that beautified the sect, that was otherwise inferior to the rest, saith yet excellently well: It is a pleasure, to stand upon the shore, and to see ships tossed upon the sea; a pleasure, to stand in the window of a castle, and to see a battle, and the adventures thereof below: but no pleasure is comparable to the standing upon the vantage ground of truth (a hill not to be commanded, and where the air is always clear and serene), and to see the errors, and wanderings, and mists, and tempests, in the vale below; so always that this prospect be with pity, and not with swelling, or pride. Certainly, it is heaven upon earth, to have a man's mind move in charity, rest in providence, and turn upon the poles of truth.

To pass from theological, and philosophical truth, to the truth of civil business; it will be acknowledged, even by those that practise it not, that clear, and round dealing, is the honor of man's nature; and that mixture of falsehoods, is like alloy in coin of gold and silver, which may make the metal work the better, but it embaseth it. For these winding, and crooked courses, are the goings of the serpent; which goeth basely upon the belly, and not upon the feet. There is no vice, that doth so cover a man with shame, as to be found false and perfidious. And therefore Montaigne saith prettily, when he inquired the reason, why the word of the lie should be such a disgrace, and such an odious charge? Saith he, If it be well weighed, to say that a man lieth, is as much to say, as that he is brave towards God, and a coward towards men. For a lie faces God, and shrinks from man. Surely the wickedness of falsehood, and breach of faith, cannot possibly be so highly expressed, as in that it shall be the last peal, to call the judgments of God upon the generations of men; it being foretold, that when Christ cometh, he shall not find faith upon the earth.

Of Death

MEN fear death, as children fear to go in the dark; and as that natural fear in children, is increased with tales, so is the other. Certainly, the contemplation of death, as the wages of sin, and passage to another world, is holy and religious; but the fear of it, as a tribute due unto nature, is weak. Yet in religious meditations, there is sometimes mixture of vanity, and of superstition. You shall read, in some of the friars' books of mortification, that a man should think with himself, what the pain is, if he have but his finger's end pressed, or tortured, and thereby imagine, what the pains of death are, when the whole body is corrupted, and dissolved; when many times death passeth, with less pain than the torture of a limb; for the most vital parts, are not the quickest of sense. And by him that spake only as a philosopher, and natural man, it was well said, Pompa mortis magis terret, quam mors ipsa. Groans, and convulsions, and a discolored face, and friends weeping, and blacks, and obsequies, and the like, show death terrible. It is worthy the observing, that there is no passion in the mind of man, so weak, but it mates, and masters, the fear of death; and therefore, death is no such terrible enemy, when a man hath so many attendants about him, that can win the combat of him. Revenge triumphs over death; love slights it; honor aspireth to it; grief flieth to it; fear preoccupateth it; nay, we read, after Otho the emperor had slain himself, pity (which is the tenderest of affections) provoked many to die, out of mere compassion to their sovereign, and as the truest sort of followers. Nay, Seneca adds niceness and satiety: Cogita quamdiu eadem feceris; mori velle, non tantum fortis aut miser, sed etiam fastidiosus potest. A man would die, though he were neither valiant, nor miserable, only upon a weariness to do the same thing so oft, over and over. It is no less worthy, to observe, how little alteration in good spirits, the approaches of death make; for they appear to be the same men, till the last instant. Augustus Caesar died in a compliment; Livia, conjugii nostri memor, vive et vale. Tiberius in dissimulation; as Tacitus saith of him, Jam Tiberium vires et corpus, non

dissimulatio, deserebant. Vespasian in a jest, sitting upon the stool; Ut puto deus fio. Galba with a sentence; Feri, si ex re sit populi Romani; holding forth his neck. Septimius Severus in despatch; Adeste si quid mihi restat agendum. And the like. Certainly the Stoics bestowed too much cost upon death, and by their great preparations, made it appear more fearful. Better saith he, qui finem vitae extremum inter munera ponat naturae. It is as natural to die, as to be born; and to a little infant, perhaps, the one is as painful, as the other. He that dies in an earnest pursuit, is like one that is wounded in hot blood; who, for the time, scarce feels the hurt; and therefore a mind fixed, and bent upon somewhat that is good, doth avert the dolors of death. But, above all, believe it, the sweetest canticle is', Nunc dimittis; when a man hath obtained worthy ends, and expectations. Death hath this also; that it openeth the gate to good fame, and extinguisheth envy. — Extinctus amabitur idem.

Of Unity In Religion

RELIGION being the chief band of human society, it is a happy thing, when itself is well contained within the true band of unity. The quarrels, and divisions about religion, were evils unknown to the heathen. The reason was, because the religion of the heathen, consisted rather in rites and ceremonies, than in any constant belief. For you may imagine, what kind of faith theirs was, when the chief doctors, and fathers of their church, were the poets. But the true God hath this attribute, that he is a jealous God; and therefore, his worship and religion, will endure no mixture, nor partner. We shall therefore speak a few words, concerning the unity of the church; what are the fruits thereof; what the bounds; and what the means.

The fruits of unity (next unto the well pleasing of God, which is all in all) are two: the one, towards those that are without the church, the other, towards those that are within. For the former; it is certain, that heresies, and schisms, are of all others the greatest scandals; yea, more than corruption of manners. For as in the natural body, a wound, or solution of continuity, is worse than a corrupt humor; so in the spiritual. So that nothing, doth so much keep men out of the church, and drive men out of the church, as breach of unity. And therefore, whensoever it cometh to that pass, that one saith, Ecce in deserto, another saith, Ecce in penetralibus; that is, when some men seek Christ, in the conventicles of heretics, and others, in an outward face of a church, that voice had need continually to sound in men's ears, Nolite exire, — Go not out. The doctor of the Gentiles (the propriety of whose vocation, drew him to have a special care of those without) saith, if an heathen come in, and hear you speak with several tongues, will he not say that you are mad? And certainly it is little better, when atheists, and profane persons, do hear of so many discordant, and contrary opinions in religion; it doth avert them from the church, and maketh them, to sit down in the chair of the scorners. It is but a light thing, to be vouched in so serious a matter, but yet it expresseth well the deformity. There is a master of scoffing, that in his catalogue

of books of a feigned library, sets down this title of a book, The Morris-Dance of Heretics. For indeed, every sect of them, hath a diverse posture, or cringe by themselves, which cannot but move derision in worldlings, and depraved politics, who are apt to contemn holy things.

As for the fruit towards those that are within; it is peace; which containeth infinite blessings. It establisheth faith; it kindleth charity; the outward peace of the church, distilleth into peace of conscience; and it turneth the labors of writing, and reading of controversies, into treaties of mortification and devotion.

Concerning the bounds of unity; the true placing of them, importeth exceedingly. There appear to be two extremes. For to certain zealants, all speech of pacification is odious. Is it peace, Jehu,? What hast thou to do with peace? turn thee behind me. Peace is not the matter, but following, and party. Contrariwise, certain Laodiceans, and lukewarm persons, think they may accommodate points of religion, by middle way, and taking part of both, and witty reconcilements; as if they would make an arbitrament between God and man. Both these extremes are to be avoided; which will be done, if the league of Christians, penned by our Savior himself, were in two cross clauses thereof, soundly and plainly expounded: He that is not with us, is against us; and again, He that is not against us, is with us; that is, if the points fundamental and of substance in religion, were truly discerned and distinguished, from points not merely of faith, but of opinion, order, or good intention. This is a thing may seem to many a matter trivial, and done already. But if it were done less partially, it would be embraced more generally.

Of this I may give only this advice, according to my small model. Men ought to take heed, of rending God's church, by two kinds of controversies. The one is, when the matter of the point controverted, is too small and light, not worth the heat and strife about it, kindled only by contradiction. For, as it is noted, by one of the fathers, Christ's coat indeed had no seam, but the church's vesture was of divers colors; whereupon he saith, In veste varietas sit, scissura non sit; they be two things, unity and uniformity. The other is, when the matter of the point controverted, is great, but it is driven to an over-great subtilty, and obscurity; so

that it becometh a thing rather ingenious, than substantial. A man that is of judgment and understanding, shall sometimes hear ignorant men differ, and know well within himself, that those which so differ, mean one thing, and yet they themselves would never agree. And if it come so to pass, in that distance of judgment, which is between man and man, shall we not think that God above, that knows the heart, doth not discern that frail men, in some of their contradictions, intend the same thing; and accepteth of both? The nature of such controversies is excellently expressed, by St. Paul, in the warning and precept, that he giveth concerning the same, Devita profanas vocum novitates, et oppositiones falsi nominis scientiae. Men create oppositions, which are not; and put them into new terms, so fixed, as whereas the meaning ought to govern the term, the term in effect governeth the meaning. There be also two false peaces, or unities: the one, when the peace is grounded, but upon an implicit ignorance; for all colors will agree in the dark: the other, when it is pieced up, upon a direct admission of contraries, in fundamental points. For truth and falsehood, in such things, are like the iron and clay, in the toes of Nebuchadnezzar's image; they may cleave, but they will not incorporate.

Concerning the means of procuring unity; men must beware, that in the procuring, or reuniting, of religious unity, they do not dissolve and deface the laws of charity, and of human society. There be two swords amongst Christians, the spiritual and temporal; and both have their due office and place, in the maintenance of religion. But we may not take up the third sword, which is Mahomet's sword, or like unto it; that is, to propagate religion by wars, or by sanguinary persecutions to force consciences; except it be in cases of overt scandal, blasphemy, or intermixture of practice against the state; much less to nourish seditions; to authorize conspiracies and rebellions; to put the sword into the people's hands; and the like; tending to the subversion of all government, which is the ordinance of God. For this is but to dash the first table against the second; and so to consider men as Christians, as we forget that they are men. Lucretius the poet, when he beheld the act of Agamemnon, that could endure the

sacrificing of his own daughter, exclaimed: Tantum Religio potuit suadere malorum.

What would he have said, if he had known of the massacre in France, or the powder treason of England? He would have been seven times more Epicure, and atheist, than he was. For as the temporal sword is to be drawn with great circumspection in cases of religion; so it is a thing monstrous to put it into the hands of the common people. Let that be left unto the Anabaptists, and other furies. It was great blasphemy, when the devil said, I will ascend, and be like the highest; but it is greater blasphemy, to personate God, and bring him in saying, I will descend, and be like the prince of darkness; and what is it better, to make the cause of religion to descend, to the cruel and execrable actions of murthering princes, butchery of people, and subversion of states and governments? Surely this is to bring down the Holy Ghost, instead of the likeness of a dove, in the shape of a vulture or raven; and set, out of the bark of a Christian church, a flag of a bark of pirates, and assassins. Therefore it is most necessary, that the church, by doctrine and decree, princes by their sword, and all learnings, both Christian and moral, as by their Mercury rod, do damn and send to hell for ever, those facts and opinions tending to the support of the same; as hath been already in good part done. Surely in counsels concerning religion, that counsel of the apostle would be prefixed, Ira hominis non implet justitiam Dei. And it was a notable observation of a wise father, and no less ingenuously confessed; that those which held and persuaded pressure of consciences, were commonly interested therein, themselves, for their own ends.

Of Revenge

REVENGE is a kind of wild justice; which the more man's nature runs to, the more ought law to weed it out. For as for the first wrong, it doth but offend the law; but the revenge of that wrong, putteth the law out of office. Certainly, in taking revenge, a man is but even with his enemy; but in passing it over, he is superior; for it is a prince's part to pardon. And Solomon, I am sure, saith, It is the glory of a man, to pass by an offence. That which is past is gone, and irrevocable; and wise men have enough to do, with things present and to come; therefore they do but trifle with themselves, that labor in past matters. There is no man doth a wrong, for the wrong's sake; but thereby to purchase himself profit, or pleasure, or honor, or the like. Therefore why should I be angry with a man, for loving himself better than me? And if any man should do wrong, merely out of ill-nature, why, yet it is but like the thorn or briar, which prick and scratch, because they can do no other. The most tolerable sort of revenge, is for those wrongs which there is no law to remedy; but then let a man take heed, the revenge be such as there is no law to punish; else a man's enemy is still before hand, and it is two for one. Some, when they take revenge, are desirous, the party should know, whence it cometh. This is the more generous. For the delight seemeth to be, not so much in doing the hurt, as in making the party repent. But base and crafty cowards, are like the arrow that flieth in the dark. Cosmus, duke of Florence, had a desperate saying against perfidious or neglecting friends, as if those wrongs were unpardonable; You shall read (saith he) that we are commanded to forgive our enemies; but you never read, that we are commanded to forgive our friends. But yet the spirit of Job was in a better tune: Shall we (saith he) take good at God's hands, and not be content to take evil also? And so of friends in a proportion. This is certain, that a man that studieth revenge, keeps his own wounds green, which otherwise would heal, and do well. Public revenges are for the most part fortunate; as that for the death of Caesar; for the death of Pertinax; for the death of Henry the Third of France; and many more.

But in private revenges, it is not so. Nay rather, vindictive persons live the life of witches; who, as they are mischievous, so end they infortunate.

Of Adversity

IT WAS an high speech of Seneca (after the manner of the Stoics), that the good things, which belong to prosperity, are to be wished; but the good things, that belong to adversity, are to be admired. Bona rerum secundarum optabilia; adversarum mirabilia. Certainly if miracles be the command over nature, they appear most in adversity. It is yet a higher speech of his, than the other (much too high for a heathen), It is true greatness, to have in one the frailty of a man, and the security of a God. Vere magnum habere fragilitatem hominis, securitatem Dei. This would have done better in poesy, where transcendences are more allowed. And the poets indeed have been busy with it; for it is in effect the thing, which figured in that strange fiction of the ancient poets, which seemeth not to be without mystery; nay, and to have some approach to the state of a Christian; that Hercules, when he went to unbind Prometheus (by whom human nature is represented), sailed the length of the great ocean, in an earthen pot or pitcher; lively describing Christian resolution, that saileth in the frail bark of the flesh, through the waves of the world. But to speak in a mean. The virtue of prosperity, is temperance; the virtue of adversity, is fortitude; which in morals is the more heroical virtue. Prosperity is the blessing of the Old Testament; adversity is the blessing of the New; which carrieth the greater benediction, and the clearer revelation of God's favor. Yet even in the Old Testament, if you listen to David's harp, you shall hear as many hearse-like airs as carols; and the pencil of the Holy Ghost hath labored more in describing the afflictions of Job, than the felicities of Solomon. Prosperity is not without many fears and distastes; and adversity is not without comforts and hopes. We see in needle-works and embroideries, it is more pleasing to have a lively work, upon a sad and solemn ground, than to have a dark and melancholy work, upon a lightsome ground: judge therefore of the pleasure of the heart, by the pleasure of the eye. Certainly virtue is like precious odors, most fragrant when they are incensed, or crushed: for prosperity doth best discover vice, but adversity doth best discover virtue.

Of Simulation And Dissimulation

DISSIMULATION is but a faint kind of policy, or wisdom; for it asketh a strong wit, and a strong heart, to know when to tell truth, and to do it. Therefore it is the weaker sort of politics, that are the great dissemblers.

Tacitus saith, Livia sorted well with the arts of her husband, and dissimulation of her son; attributing arts or policy to Augustus, and dissimulation to Tiberius. And again, when Mucianus encourageth Vespasian, to take arms against Vitellius, he saith, We rise not against the piercing judgment of Augustus, nor the extreme caution or closeness of Tiberius. These properties, of arts or policy, and dissimulation or closeness, are indeed habits and faculties several, and to be distinguished. For if a man have that penetration of judgment, as he can discern what things are to be laid open, and what to be secreted, and what to be showed at half lights, and to whom and when (which indeed are arts of state, and arts of life, as Tacitus well calleth them), to him, a habit of dissimulation is a hinderance and a poorness. But if a man cannot obtain to that judgment, then it is left to him generally, to be close, and a dissembler. For where a man cannot choose, or vary in particulars, there it is good to take the safest, and wariest way, in general; like the going softly, by one that cannot well see. Certainly the ablest men that ever were, have had all an openness, and frankness, of dealing; and a name of certainty and veracity; but then they were like horses well managed; for they could tell passing well, when to stop or turn; and at such times, when they thought the case indeed required dissimulation, if then they used it, it came to pass that the former opinion, spread abroad, of their good faith and clearness of dealing, made them almost invisible.

There be three degrees of this hiding and veiling of a man’s self. The first, closeness, reservation, and secrecy; when a man leaveth himself without observation, or without hold to be taken, what he is. The second, dissimulation, in the negative; when a man lets fall signs and arguments, that he is not, that he

is. And the third, simulation, in the affirmative; when a man industriously and expressly feigns and pretends to be, that he is not.

For the first of these, secrecy; it is indeed the virtue of a confessor. And assuredly, the secret man heareth many confessions. For who will open himself, to a blab or a babbler? But if a man be thought secret, it inviteth discovery; as the more close air sucketh in the more open; and as in confession, the revealing is not for worldly use, but for the ease of a man's heart, so secret men come to the knowledge of many things in that kind; while men rather discharge their minds, than impart their minds. In few words, mysteries are due to secrecy. Besides (to say truth) nakedness is uncomely, as well in mind as body; and it addeth no small reverence, to men's manners and actions, if they be not altogether open. As for talkers and futile persons, they are commonly vain and credulous withal. For he that talketh what he knoweth, will also talk what he knoweth not. Therefore set it down, that an habit of secrecy, is both politic and moral. And in this part, it is good that a man's face give his tongue leave to speak. For the discovery of a man' s self, by the tracts of his countenance, is a great weakness and betraying; by how much it is many times more marked, and believed, than a man's words.

For the second, which is dissimulation; it followeth many times upon secrecy, by a necessity; so that he that will be secret, must be a dissembler in some degree. For men are too cunning, to suffer a man to keep an indifferent carriage between both, and to be secret, without swaying the balance on either side. They will so beset a man with questions, and draw him on, and pick it out of him, that, without an absurd silence, he must show an inclination one way; or if he do not, they will gather as much by his silence, as by his speech. As for equivocations, or oraculous speeches, they cannot hold out long. So that no man can be secret, except he give himself a little scope of dissimulation; which is, as it were, but the skirts or train of secrecy.

But for the third degree, which is simulation, and false profession; that I hold more culpable, and less politic; except it be in great and rare matters. And therefore a general custom of simulation (which is this last degree) is a vice,

using either of a natural falseness or fearfulness, or of a mind that hath some main faults, which because a man must needs disguise, it maketh him practise simulation in other things, lest his hand should be out of use.

The great advantages of simulation and dissimulation are three. First, to lay asleep opposition, and to surprise. For where a man's intentions are published, it is an alarum, to call up all that are against them. The second is, to reserve to a man's self a fair retreat. For if a man engage himself by a manifest declaration, he must go through or take a fall. The third is, the better to discover the mind of another. For to him that opens himself, men will hardly show themselves adverse; but will fair let him go on, and turn their freedom of speech, to freedom of thought. And therefore it is a good shrewd proverb of the Spaniard, Tell a lie and find a troth. As if there were no way of discovery, but by simulation. There be also three disadvantages, to set it even. The first, that simulation and dissimulation commonly carry with them a show of fearfulness, which in any business, doth spoil the feathers, of round flying up to the mark. The second, that it puzzleth and perplexeth the conceits of many, that perhaps would otherwise co-operate with him; and makes a man walk almost alone, to his own ends. The third and greatest is, that it depriveth a man of one of the most principal instruments for action; which is trust and belief. The best composition and temperature, is to have openness in fame and opinion; secrecy in habit; dissimulation in seasonable use; and a power to feign, if there be no remedy.

Of Parents And Children

THE joys of parents are secret; and so are their griefs and fears. They cannot utter the one; nor they will not utter the other. Children sweeten labors; but they make misfortunes more bitter. They increase the cares of life; but they mitigate the remembrance of death. The perpetuity by generation is common to beasts; but memory, merit, and noble works, are proper to men. And surely a man shall see the noblest works and foundations have proceeded from childless men; which have sought to express the images of their minds, where those of their bodies have failed. So the care of posterity is most in them, that have no posterity. They that are the first raisers of their houses, are most indulgent towards their children; beholding them as the continuance, not only of their kind, but of their work; and so both children and creatures.

The difference in affection, of parents towards their several children, is many times unequal; and sometimes unworthy; especially in the mothers; as Solomon saith, A wise son rejoiceth the father, but an ungracious son shames the mother. A man shall see, where there is a house full of children, one or two of the eldest respected, and the youngest made wantons; but in the midst, some that are as it were forgotten, who many times, nevertheless, prove the best. The illiberality of parents, in allowance towards their children, is an harmful error; makes them base; acquaints them with shifts; makes them sort with mean company; and makes them surfeit more when they come to plenty. And therefore the proof is best, when men keep their authority towards the children, but not their purse. Men have a foolish manner (both parents and schoolmasters and servants) in creating and breeding an emulation between brothers, during childhood, which many times sorteth to discord when they are men, and disturbeth families. The Italians make little difference between children, and nephews or near kinsfolks; but so they be of the lump, they care not though they pass not through their own body. And, to say truth, in nature it is much a like matter; insomuch that we see a nephew sometimes resembleth an uncle, or a kinsman, more than his own parent;

as the blood happens. Let parents choose betimes, the vocations and courses they mean their children should take; for then they are most flexible; and let them not too much apply themselves to the disposition of their children, as thinking they will take best to that, which they have most mind to. It is true, that if the affection or aptness of the children be extraordinary, then it is good not to cross it; but generally the precept is good, optimum elige, suave et facile illud faciet consuetudo. Younger brothers are commonly fortunate, but seldom or never where the elder are disinherited.

Of Marriage And Single Life

HE THAT hath wife and children hath given hostages to fortune; for they are impediments to great enterprises, either of virtue or mischief. Certainly the best works, and of greatest merit for the public, have proceeded from the unmarried or childless men; which both in affection and means, have married and endowed the public. Yet it were great reason that those that have children, should have greatest care of future times; unto which they know they must transmit their dearest pledges. Some there are, who though they lead a single life, yet their thoughts do end with themselves, and account future times impertinences. Nay, there are some other, that account wife and children, but as bills of charges. Nay more, there are some foolish rich covetous men, that take a pride, in having no children, because they may be thought so much the richer. For perhaps they have heard some talk, Such an one is a great rich man, and another except to it, Yea, but he hath a great charge of children; as if it were an abatement to his riches. But the most ordinary cause of a single life, is liberty, especially in certain self-pleasing and humorous minds, which are so sensible of every restraint, as they will go near to think their girdles and garters, to be bonds and shackles. Unmarried men are best friends, best masters, best servants; but not always best subjects; for they are light to run away; and almost all fugitives, are of that condition. A single life doth well with churchmen; for charity will hardly water the ground, where it must first fill a pool. It is indifferent for judges and magistrates; for if they be facile and corrupt, you shall have a servant, five times worse than a wife. For soldiers, I find the generals commonly in their hortatives, put men in mind of their wives and children; and I think the despising of marriage amongst the Turks, maketh the vulgar soldier more base. Certainly wife and children are a kind of discipline of humanity; and single men, though they may be many times more charitable, because their means are less exhaust, yet, on the other side, they are more cruel and hardhearted (good to make severe inquisitors), because their tenderness is not so oft called upon. Grave natures, led

by custom, and therefore constant, are commonly loving husbands, as was said of Ulysses, vetulam suam praetulit immortalitati. Chaste women are often proud and froward, as presuming upon the merit of their chastity. It is one of the best bonds, both of chastity and obedience, in the wife, if she think her husband wise; which she will never do, if she find him jealous. Wives are young men's mistresses; companions for middle age; and old men's nurses. So as a man may have a quarrel to marry, when he will. But yet he was reputed one of the wise men, that made answer to the question, when a man should marry, — A young man not yet, an elder man not at all. It is often seen that bad husbands, have very good wives; whether it be, that it raiseth the price of their husband's kindness, when it comes; or that the wives take a pride in their patience. But this never fails, if the bad husbands were of their own choosing, against their friends' consent; for then they will be sure to make good their own folly.

Of Envy

THERE be none of the affections, which have been noted to fascinate or bewitch, but love and envy. They both have vehement wishes; they frame themselves readily into imaginations and suggestions; and they come easily into the eye, especially upon the present of the objects; which are the points that conduce to fascination, if any such thing there be. We see likewise, the Scripture calleth envy an evil eye; and the astrologers, call the evil influences of the stars, evil aspects; so that still there seemeth to be acknowledged, in the act of envy, an ejaculation or irradiation of the eye. Nay, some have been so curious, as to note, that the times when the stroke or percussion of an envious eye doth most hurt, are when the party envied is beheld in glory or triumph; for that sets an edge upon envy: and besides, at such times the spirits of the person envied, do come forth most into the outward parts, and so meet the blow.

But leaving these curiosities (though not unworthy to be thought on, in fit place), we will handle, what persons are apt to envy others; what persons are most subject to be envied themselves; and what is the difference between public and private envy.

A man that hath no virtue in himself, ever envieth virtue in others. For men's minds, will either feed upon their own good, or upon others' evil; and who wanteth the one, will prey upon the other; and whoso is out of hope, to attain to another's virtue, will seek to come at even hand, by depressing another's fortune.

A man that is busy, and inquisitive, is commonly envious. For to know much of other men's matters, cannot be because all that ado may concern his own estate; therefore it must needs be, that he taketh a kind of play-pleasure, in looking upon the fortunes of others. Neither can he, that mindeth but his own business, find much matter for envy. For envy is a gadding passion, and walketh the streets, and doth not keep home: Non est curiosus, quin idem sit malevolus.

Men of noble birth, are noted to be envious towards new men, when they rise. For the distance is altered, and it is like a deceit of the eye, that when others come on, they think themselves, go back.

Deformed persons, and eunuchs, and old men, and bastards, are envious. For he that cannot possibly mend his own case, will do what he can, to impair another's; except these defects light upon a very brave, and heroical nature, which thinketh to make his natural wants part of his honor; in that it should be said, that an eunuch, or a lame man, did such great matters; affecting the honor of a miracle; as it was in Narses the eunuch, and Agesilaus and Tamberlanes, that were lame men.

The same is the case of men, that rise after calamities and misfortunes. For they are as men fallen out with the times; and think other men's harms, a redemption of their own sufferings.

They that desire to excel in too many matters, out of levity and vain glory, are ever envious. For they cannot want work; it being impossible, but many, in some one of those things, should surpass them. Which was the character of Adrian the Emperor; that mortally envied poets, and painters, and artificers, in works wherein he had a vein to excel.

Lastly, near kinsfolks, and fellows in office, and those that have been bred together, are more apt to envy their equals, when they are raised. For it doth upbraid unto them their own fortunes, and pointeth at them, and cometh oftener into their remembrance, and incurreth likewise more into the note of others; and envy ever redoubleth from speech and fame. Cain's envy was the more vile and malignant, towards his brother Abel, because when his sacrifice was better accepted, there was no body to look on. Thus much for those, that are apt to envy.

Concerning those that are more or less subject to envy: First, persons of eminent virtue, when they are advanced, are less envied. For their fortune seemeth, but due unto them; and no man envieth the payment of a debt, but rewards and liberality rather. Again, envy is ever joined with the comparing of a man's self; and where there is no comparison, no envy; and therefore kings are

not envied, but by kings. Nevertheless it is to be noted, that unworthy persons are most envied, at their first coming in, and afterwards overcome it better; whereas contrariwise, persons of worth and merit are most envied, when their fortune continueth long. For by that time, though their virtue be the same, yet it hath not the same lustre; for fresh men grow up that darken it.

Persons of noble blood, are less envied in their rising. For it seemeth but right done to their birth. Besides, there seemeth not much added to their fortune; and envy is as the sunbeams, that beat hotter upon a bank, or steep rising ground, than upon a flat. And for the same reason, those that are advanced by degrees, are less envied than those that are advanced suddenly and per saltum.

Those that have joined with their honor great travels, cares, or perils, are less subject to envy. For men think that they earn their honors hardly, and pity them sometimes; and pity ever healeth envy. Wherefore you shall observe, that the more deep and sober sort of politic persons, in their greatness, are ever bemoaning themselves, what a life they lead; chanting a quanta patimur! Not that they feel it so, but only to abate the edge of envy. But this is to be understood, of business that is laid upon men, and not such, as they call unto themselves. For nothing increaseth envy more, than an unnecessary and ambitious engrossing of business. And nothing doth extinguish envy more, than for a great person to preserve all other inferior officers, in their full lights and pre-eminences of their places. For by that means, there be so many screens between him and envy.

Above all, those are most subject to envy, which carry the greatness of their fortunes, in an insolent and proud manner; being never well, but while they are showing how great they are, either by outward pomp, or by triumphing over all opposition or competition; whereas wise men will rather do sacrifice to envy, in suffering themselves sometimes of purpose to be crossed, and overborne in things that do not much concern them. Notwithstanding, so much is true, that the carriage of greatness, in a plain and open manner (so it be without arrogancy and vain glory) doth draw less envy, than if it be in a more crafty and cunning

fashion. For in that course, a man doth but disavow fortune; and seemeth to be conscious of his own want in worth; and doth but teach others, to envy him.

Lastly, to conclude this part; as we said in the beginning, that the act of envy had somewhat in it of witchcraft, so there is no other cure of envy, but the cure of witchcraft; and that is, to remove the lot (as they call it) and to lay it upon another. For which purpose, the wiser sort of great persons, bring in ever upon the stage somebody upon whom to derive the envy, that would come upon themselves; sometimes upon ministers and servants; sometimes upon colleagues and associates; and the like; and for that turn there are never wanting, some persons of violent and undertaking natures, who, so they may have power and business, will take it at any cost.

Now, to speak of public envy. There is yet some good in public envy, whereas in private, there is none. For public envy, is as an ostracism, that eclipseth men, when they grow too great. And therefore it is a bridle also to great ones, to keep them within bounds.

This envy, being in the Latin word invidia, goeth in the modern language, by the name of discontentment; of which we shall speak, in handling sedition. It is a disease, in a state, like to infection. For as infection spreadeth upon that which is sound, and tainteth it; so when envy is gotten once into a state, it traduceth even the best actions thereof, and turneth them into an ill odor. And therefore there is little won, by intermingling of plausible actions. For that doth argue but a weakness, and fear of envy, which hurteth so much the more, as it is likewise usual in infections; which if you fear them, you call them upon you.

This public envy, seemeth to beat chiefly upon principal officers or ministers, rather than upon kings, and estates themselves. But this is a sure rule, that if the envy upon the minister be great, when the cause of it in him is small; or if the envy be general, in a manner upon all the ministers of an estate; then the envy (though hidden) is truly upon the state itself. And so much of public envy or discontentment, and the difference thereof from private envy, which was handled in the first place.

We will add this in general, touching the affection of envy; that of all other affections, it is the most importune and continual. For of other affections, there is occasion given, but now and then; and therefore it was well said, Invidia festos dies non agit: for it is ever working upon some or other. And it is also noted, that love and envy do make a man pine, which other affections do not, because they are not so continual. It is also the vilest affection, and the most depraved; for which cause it is the proper attribute of the devil, who is called, the envious man, that soweth tares amongst the wheat by night; as it always cometh to pass, that envy worketh subtilly, and in the dark, and to the prejudice of good things, such as is the wheat.

Of Love

THE stage is more beholding to love, than the life of man. For as to the stage, love is ever matter of comedies, and now and then of tragedies; but in life it doth much mischief; sometimes like a siren, sometimes like a fury. You may observe, that amongst all the great and worthy persons (whereof the memory remaineth, either ancient or recent) there is not one, that hath been transported to the mad degree of love: which shows that great spirits, and great business, do keep out this weak passion. You must except, nevertheless, Marcus Antonius, the half partner of the empire of Rome, and Appius Claudius, the decemvir and lawgiver; whereof the former was indeed a voluptuous man, and inordinate; but the latter was an austere and wise man: and therefore it seems (though rarely) that love can find entrance, not only into an open heart, but also into a heart well fortified, if watch be not well kept. It is a poor saying of Epicurus, Satis magnum alter alteri theatrum sumus; as if man, made for the contemplation of heaven, and all noble objects, should do nothing but kneel before a little idol, and make himself a subject, though not of the mouth (as beasts are), yet of the eye; which was given him for higher purposes. It is a strange thing, to note the excess of this passion, and how it braves the nature, and value of things, by this; that the speaking in a perpetual hyperbole, is comely in nothing but in love. Neither is it merely in the phrase; for whereas it hath been well said, that the arch-flatterer, with whom all the petty flatterers have intelligence, is a man's self; certainly the lover is more. For there was never proud man thought so absurdly well of himself, as the lover doth of the person loved; and therefore it was well said, That it is impossible to love, and to be wise. Neither doth this weakness appear to others only, and not to the party loved; but to the loved most of all, except the love be reciproque. For it is a true rule, that love is ever rewarded, either with the reciproque, or with an inward and secret contempt. By how much the more, men ought to beware of this passion, which loseth not only other things, but itself! As for the other losses, the poet's relation doth well figure them: that he that

preferred Helena, quitted the gifts of Juno and Pallas. For whosoever esteemeth too much of amorous affection, quitteth both riches and wisdom. This passion hath his floods, in very times of weakness; which are great prosperity, and great adversity; though this latter hath been less observed: both which times kindle love, and make it more fervent, and therefore show it to be the child of folly. They do best, who if they cannot but admit love, yet make it keep quarters; and sever it wholly from their serious affairs, and actions, of life; for if it check once with business, it troubleth men's fortunes, and maketh men, that they can no ways be true to their own ends. I know not how, but martial men are given to love: I think, it is but as they are given to wine; for perils commonly ask to be paid in pleasures. There is in man's nature, a secret inclination and motion, towards love of others, which if it be not spent upon some one or a few, doth naturally spread itself towards many, and maketh men become humane and charitable; as it is seen sometime in friars. Nuptial love maketh mankind; friendly love perfecteth it; but wanton love corrupteth, and embaseth it.

Of Great Place

MEN in great place are thrice servants: servants of the sovereign or state; servants of fame; and servants of business. So as they have no freedom; neither in their persons, nor in their actions, nor in their times. It is a strange desire, to seek power and to lose liberty: or to seek power over others, and to lose power over a man's self. The rising unto place is laborious; and by pains, men come to greater pains; and it is sometimes base; and by indignities, men come to dignities. The standing is slippery, and the regress is either a downfall, or at least an eclipse, which is a melancholy thing. Cum non sis qui fueris, non esse cur velis vivere. Nay, retire men cannot when they would, neither will they, when it were reason; but are impatient of privateness, even in age and sickness, which require the shadow; like old townsmen, that will be still sitting at their street door, though thereby they offer age to scom. Certainly great persons had need to borrow other men's opinions, to think themselves happy; for if they judge by their own feeling, they cannot find it; but if they think with themselves, what other men think of them, and that other men would fain be, as they are, then they are happy, as it were, by report; when perhaps they find the contrary within. For they are the first, that find their own griefs, though they be the last, that find their own faults. Certainly men in great fortunes are strangers to themselves, and while they are in the puzzle of business, they have no time to tend their health, either of body or mind. Illi mors gravis incubat, qui notus nimis omnibus, ignotus moritur sibi. In place, there is license to do good, and evil; whereof the latter is a curse: for in evil, the best condition is not to win; the second, not to can. But power to do good, is the true and lawful end of aspiring. For good thoughts (though God accept them) yet, towards men, are little better than good dreams, except they be put in act; and that cannot be, without power and place, as the vantage, and commanding ground. Merit and good works, is the end of man's motion; and conscience of the same is the accomplishment of man's rest. For if a man can be partaker of God's theatre, he shall likewise be partaker of

God's rest. Et conversus Deus, ut aspiceret opera quae fecerunt manus suae, vidit quod omnia essent bona nimis; and then the sabbath. In the discharge of thy place, set before thee the best examples; for imitation is a globe of precepts. And after a time, set before thee thine own example; and examine thyself strictly, whether thou didst not best at first. Neglect not also the examples, of those that have carried themselves ill, in the same place; not to set off thyself, by taxing their memory, but to direct thyself, what to avoid. Reform therefore, without bravery, or scandal of former times and persons; but yet set it down to thyself, as well to create good precedents, as to follow them. Reduce things to the first institution, and observe wherein, and how, they have degenerate; but yet ask counsel of both times; of the ancient time, what is best; and of the latter time, what is fittest. Seek to make thy course regular, that men may know beforehand, what they may expect; but be not too positive and peremptory; and express thyself well, when thou digressest from thy rule. Preserve the right of thy place; but stir not questions of jurisdiction; and rather assume thy right, in silence and de facto, than voice it with claims, and challenges. Preserve likewise the rights of inferior places; and think it more honor, to direct in chief, than to be busy in all. Embrace and invite helps, and advices, touching the execution of thy place; and do not drive away such, as bring thee information, as meddlers; but accept of them in good part. The vices of authority are chiefly four: delays, corruption, roughness, and facility. For delays: give easy access; keep times appointed; go through with that which is in hand, and interlace not business, but of necessity. For corruption: do not only bind thine own hands, or thy servants' hands, from taking, but bind the hands of suitors also, from offering. For integrity used doth the one; but integrity professed, and with a manifest detestation of bribery, doth the other. And avoid not only the fault, but the suspicion. Whosoever is found variable, and changeth manifestly without manifest cause, giveth suspicion of corruption. Therefore always, when thou changest thine opinion or course, profess it plainly, and declare it, together with the reasons that move thee to change; and do not think to steal it. A servant or a favorite, if he be inward, and no other apparent cause of esteem, is commonly thought, but a by-way to close

corruption. For roughness: it is a needless cause of discontent: severity breedeth fear, but roughness breedeth hate. Even reproofs from authority, ought to be grave, and not taunting. As for facility: it is worse than bribery. For bribes come but now and then; but if importunity, or idle respects, lead a man, he shall never be without. As Solomon saith, To respect persons is not good; for such a man will transgress for a piece of bread. It is most true, that was anciently spoken, A place showeth the man. And it showeth some to the better, and some to the worse. Omnium consensu capax imperii, nisi imperasset, saith Tacitus of Galba; but of Vespasian he saith, Solus imperantium, Vespasianus mutatus in melius; though the one was meant of sufficiency, the other of manners, and affection. It is an assured sign of a worthy and generous spirit, whom honor amends. For honor is, or should be, the place of virtue; and as in nature, things move violently to their place, and calmly in their place, so virtue in ambition is violent, in authority settled and calm. All rising to great place is by a winding star; and if there be factions, it is good to side a man's self, whilst he is in the rising, and to balance himself when he is placed. Use the memory of thy predecessor, fairly and tenderly; for if thou dost not, it is a debt will sure be paid when thou art gone. If thou have colleagues, respect them, and rather call them, when they look not for it, than exclude them, when they have reason to look to be called. Be not too sensible, or too remembering, of thy place in conversation, and private answers to suitors; but let it rather be said, When he sits in place, he is another man.

Of Boldness

IT IS a trivial grammar-school text, but yet worthy a wise man's consideration. Question was asked of Demosthenes, what was the chief part of an orator? he answered, action; what next? action; what next again? action. He said it, that knew it best, and had, by nature, himself no advantage in that he commended. A strange thing, that that part of an orator, which is but superficial, and rather the virtue of a player, should be placed so high, above those other noble parts, of invention, elocution, and the rest; nay, almost alone, as if it were all in all. But the reason is plain. There is in human nature generally, more of the fool than of the wise; and therefore those faculties, by which the foolish part of men's minds is taken, are most potent. Wonderful like is the case of boldness in civil business: what first? boldness; what second and third? boldness. And yet boldness is a child of ignorance and baseness, far inferior to other parts. But nevertheless it doth fascinate, and bind hand and foot, those that are either shallow in judgment, or weak in courage, which are the greatest part; yea and prevaileth with wise men at weak times. Therefore we see it hath done wonders, in popular states; but with senates, and princes less; and more ever upon the first entrance of bold persons into action, than soon after; for boldness is an ill keeper of promise. Surely, as there are mountebanks for the natural body, so are there mountebanks for the politic body; men that undertake great cures, and perhaps have been lucky, in two or three experiments, but want the grounds of science, and therefore cannot hold out. Nay, you shall see a bold fellow many times do Mahomet's miracle. Mahomet made the people believe that he would call an hill to him, and from the top of it offer up his prayers, for the observers of his law. The people assembled; Mahomet called the hill to come to him, again and again; and when the hill stood still, he was never a whit abashed, but said, If the hill will not come to Mahomet, Mahomet will go to the hill. So these men, when they have promised great matters, and failed most shamefully, yet (if they have the perfection of boldness) they will but slight it over, and make a turn, and no

more ado. Certainly to men of great judgment, bold persons are a sport to behold; nay, and to the vulgar also, boldness has somewhat of the ridiculous. For if absurdity be the subject of laughter, doubt you not but great boldness is seldom without some absurdity. Especially it is a sport to see, when a bold fellow is out of countenance; for that puts his face into a most shrunken, and wooden posture; as needs it must; for in bashfulness, the spirits do a little go and come; but with bold men, upon like occasion, they stand at a stay; like a stale at chess, where it is no mate, but yet the game cannot stir. But this last were fitter for a satire than for a serious observation. This is well to be weighed; that boldness is ever blind; for it seeth not danger, and inconveniences. Therefore it is ill in counsel, good in execution; so that the right use of bold persons is, that they never command in chief, but be seconds, and under the direction of others. For in counsel, it is good to see dangers; and in execution, not to see them, except they be very great.

Of Goodness and Goodness Of Nature

I TAKE goodness in this sense, the affecting of the weal of men, which is that the Grecians call philanthropia; and the word humanity (as it is used) is a little too light to express it. Goodness I call the habit, and goodness of nature, the inclination. This of all virtues, and dignities of the mind, is the greatest; being the character of the Deity: and without it, man is a busy, mischievous, wretched thing; no better than a kind of vermin. Goodness answers to the theological virtue, charity, and admits no excess, but error. The desire of power in excess, caused the angels to fall; the desire of knowledge in excess, caused man to fall: but in charity there is no excess; neither can angel, nor man, come in danger by it. The inclination to goodness, is imprinted deeply in the nature of man; insomuch, that if it issue not towards men, it will take unto other living creatures; as it is seen in the Turks, a cruel people, who nevertheless are kind to beasts, and give alms, to dogs and birds; insomuch, as Busbechius reporteth, a Christian boy, in Constantinople, had like to have been stoned, for gagging in a waggishness a long-billed fowl. Errors indeed in this virtue of goodness, or charity, may be committed. The Italians have an ungracious proverb, Tanto buon che val niente: so good, that he is good for nothing. And one of the doctors of Italy, Nicholas Machiavel, had the confidence to put in writing, almost in plain terms, That the Christian faith, had given up good men, in prey to those that are tyrannical and unjust. Which he spake, because indeed there was never law, or sect, or opinion, did so much magnify goodness, as the Christian religion doth. Therefore, to avoid the scandal and the danger both, it is good, to take knowledge of the errors of an habit so excellent. Seek the good of other men, but be not in bondage to their faces or fancies; for that is but facility, or softness; which taketh an honest mind prisoner. Neither give thou AEsop’s cock a gem, who would be better pleased, and happier, if he had had a barley-corn. The example of God, teacheth the lesson truly: He sendeth his rain, and maketh his sun to shine, upon the just and unjust; but he doth not rain wealth, nor shine

honor and virtues, upon men equally. Common benefits, are to be communicate with all; but peculiar benefits, with choice. And beware how in making the portraiture, thou breakest the pattern. For divinity, maketh the love of ourselves the pattern; the love of our neighbors, but the portraiture. Sell all thou hast, and give it to the poor, and follow me: but, sell not all thou hast, except thou come and follow me; that is, except thou have a vocation, wherein thou mayest do as much good, with little means as with great; for otherwise, in feeding the streams, thou driest the fountain. Neither is there only a habit of goodness, directed by right reason; but there is in some men, even in nature, a disposition towards it; as on the other side, there is a natural malignity. For there be, that in their nature do not affect the good of others. The lighter sort of malignity, turneth but to a crassness, or frowardness, or aptness to oppose, or difficulties, or the like; but the deeper sort, to envy and mere mischief. Such men, in other men's calamities, are, as it were, in season, and are ever on the loading part: not so good as the dogs, that licked Lazarus' sores; but like flies, that are still buzzing upon any thing that is raw; misanthropi, that make it their practice, to bring men to the bough, and yet never a tree for the purpose in their gardens, as Timon had. Such dispositions, are the very errors of human nature; and yet they are the fittest timber, to make great politics of; like to knee timber, that is good for ships, that are ordained to be tossed; but not for building houses, that shall stand firm. The parts and signs of goodness, are many. If a man be gracious and courteous to strangers, it shows he is a citizen of the world, and that his heart is no island, cut off from other lands, but a continent, that joins to them. If he be compassionate towards the afflictions of others, it shows that his heart is like the noble tree, that is wounded itself, when it gives the balm. If he easily pardons, and remits offences, it shows that his mind is planted above injuries; so that he cannot be shot. If he be thankful for small benefits, it shows that he weighs men's minds, and not their trash. But above all, if he have St. Paul's perfection, that he would wish to be anathema from Christ, for the salvation of his brethren, it shows much of a divine nature, and a kind of conformity with Christ himself.

Of Nobility

WE WILL speak of nobility, first as a portion of an estate, then as a condition of particular persons. A monarchy, where there is no nobility at all, is ever a pure and absolute tyranny; as that of the Turks. For nobility attempers sovereignty, and draws the eyes of the people, somewhat aside from the line royal. But for democracies, they need it not; and they are commonly more quiet, and less subject to sedition, than where there are stirps of nobles. For men's eyes are upon the business, and not upon the persons; or if upon the persons, it is for the business' sake, as fittest, and not for flags and pedigree. We see the Switzers last well, notwithstanding their diversity of religion, and of cantons. For utility is their bond, and not respects. The united provinces of the Low Countries, in their government, excel; for where there is an equality, the consultations are more indifferent, and the payments and tributes, more cheerful. A great and potent nobility, addeth majesty to a monarch, but diminisheth power; and putteth life and spirit into the people, but presseth their fortune. It is well, when nobles are not too great for sovereignty nor for justice; and yet maintained in that height, as the insolency of inferiors may be broken upon them, before it come on too fast upon the majesty of kings. A numerous nobility causeth poverty, and inconvenience in a state; for it is a surcharge of expense; and besides, it being of necessity, that many of the nobility fall, in time, to be weak in fortune, it maketh a kind of disproportion, between honor and means.

As for nobility in particular persons; it is a reverend thing, to see an ancient castle or building, not in decay; or to see a fair timber tree, sound and perfect. How much more, to behold an ancient noble family, which has stood against the waves and weathers of time! For new nobility is but the act of power, but ancient nobility is the act of time. Those that are first raised to nobility, are commonly more virtuous, but less innocent, than their descendants; for there is rarely any rising, but by a commixture of good and evil arts. But it is reason, the memory of their virtues remain to their posterity, and their faults die with themselves.

Nobility of birth commonly abateth industry; and he that is not industrious, envieth him that is. Besides, noble persons cannot go much higher; and he that standeth at a stay, when others rise, can hardly avoid motions of envy. On the other side, nobility extinguisheth the passive envy from others, towards them; because they are in possession of honor. Certainly, kings that have able men of their nobility, shall find ease in employing them, and a better slide into their business; for people naturally bend to them, as born in some sort to command.

Of Seditions And Troubles

SHEPHERDS of people, had need know the calendars of tempests in state; which are commonly greatest, when things grow to equality; as natural tempests are greatest about the Equinoctia. And as there are certain hollow blasts of wind, and secret swellings of seas before a tempest, so are there in states:

— Ille etiam caecos instare tumultus
Saepe monet, fraudesque et operta tunescere bella.

Libels and licentious discourses against the state, when they are frequent and open; and in like sort, false news often running up and down, to the disadvantage of the state, and hastily embraced; are amongst the signs of troubles. Virgil, giving the pedigree of Fame, saith, she was sister to the Giants:

Illam Terra parens, irra irritata deorum, Extremam (ut perhibent) Coeo Enceladoque sororem Progenuit.

As if fames were the relics of seditions past; but they are no less, indeed, the preludes of seditions to come. Howsoever he noteth it right, that seditious tumults, and seditious fames, differ no more but as brother and sister, masculine and feminine; especially if it come to that, that the best actions of a state, and the most plausible, and which ought to give greatest contentment, are taken in ill sense, and traduced: for that shows the envy great, as Tacitus saith; conflata magna invidia, seu bene seu male gesta premunt. Neither doth it follow, that because these fames are a sign of troubles, that the suppressing of them with too much severity, should be a remedy of troubles. For the despising of them, many times checks them best; and the going about to stop them, doth but make a wonder long-lived. Also that kind of obedience, which Tacitus speaketh of, is to be held suspected: Erant in officio, sed tamen qui mallent mandata imperantium interpretari quam exequi; disputing, excusing, cavilling upon mandates and directions, is a kind of shaking off the yoke, and assay of disobedience; especially if in those disputings, they which are for the direction, speak fearfully and tenderly, and those that are against it, audaciously.

Also, as Machiavel noteth well, when princes, that ought to be common parents, make themselves as a party, and lean to a side, it is as a boat, that is overthrown by uneven weight on the one side; as was well seen, in the time of Henry the Third of France; for first, himself entered league for the extirpation of the Protestants; and presently after, the same league was turned upon himself. For when the authority of princes, is made but an accessory to a cause, and that there be other bands, that tie faster than the band of sovereignty, kings begin to be put almost out of possession.

Also, when discords, and quarrels, and factions are carried openly and audaciously, it is a sign the reverence of government is lost. For the motions of the greatest persons in a government, ought to be as the motions of the planets under primum mobile; according to the old opinion: which is, that every of them, is carried swiftly by the highest motion, and softly in their own motion. And therefore, when great ones in their own particular motion, move violently, and, as Tacitus expresseth it well, liberius quam ut imperantium meminissent; it is a sign the orbs are out of frame. For reverence is that, wherewith princes are girt from God; who threateneth the dissolving thereof; Solvam cingula regum.

So when any of the four pillars of government, are mainly shaken, or weakened (which are religion, justice, counsel, and treasure), men had need to pray for fair weather. But let us pass from this part of predictions (concerning which, nevertheless, more light may be taken from that which followeth); and let us speak first, of the materials of seditions; then of the motives of them; and thirdly of the remedies.

Concerning the materials of seditions. It is a thing well to be considered; for the surest way to prevent seditions (if the times do bear it) is to take away the matter of them. For if there be fuel prepared, it is hard to tell, whence the spark shall come, that shall set it on fire. The matter of seditions is of two kinds: much poverty, and much discontentment. It is certain, so many overthrown estates, so many votes for troubles. Lucan noteth well the state of Rome before the Civil War,

Hinc usura vorax, rapidumque in tempore foenus,

Hinc concussa fides, et multis utile bellum.

This same multis utile bellum, is an assured and infallible sign, of a state disposed to seditions and troubles. And if this poverty and broken estate in the better sort, be joined with a want and necessity in the mean people, the danger is imminent and great. For the rebellions of the belly are the worst. As for discontentments, they are, in the politic body, like to humors in the natural, which are apt to gather a preternatural heat, and to inflame. And let no prince measure the danger of them by this, whether they be just or unjust: for that were to imagine people, to be too reasonable; who do often spurn at their own good: nor yet by this, whether the griefs whereupon they rise, be in fact great or small: for they are the most dangerous discontentments, where the fear is greater than the feeling. Dolendi modus, timendi non item. Besides, in great oppressions, the same things that provoke the patience, do withal mate the courage; but in fears it is not so. Neither let any prince, or state, be secure concerning discontentments, because they have been often, or have been long, and yet no peril hath ensued: for as it is true, that every vapor or fume doth not turn into a storm; so it is nevertheless true, that storms, though they blow over divers times, yet may fall at last; and, as the Spanish proverb noteth well, The cord breaketh at the last by the weakest pull.

The causes and motives of seditions are, innovation in religion; taxes; alteration of laws and customs; breaking of privileges; general oppression; advancement of unworthy persons; strangers; dearths; disbanded soldiers; factions grown desperate; and what soever, in offending people, joineth and knitteth them in a common cause.

For the remedies; there may be some general preservatives, whereof we will speak: as for the just cure, it must answer to the particular disease; and so be left to counsel, rather than rule.

The first remedy or prevention is to remove, by all means possible, that material cause of sedition whereof we spake; which is, want and poverty in the estate. To which purpose serveth the opening, and well-balancing of trade; the cherishing of manufactures; the banishing of idleness; the repressing of waste,

and excess, by sumptuary laws; the improvement and husbanding of the soil; the regulating of prices of things vendible; the moderating of taxes and tributes; and the like. Generally, it is to be foreseen that the population of a kingdom (especially if it be not mown down by wars) do not exceed the stock of the kingdom, which should maintain them. Neither is the population to be reckoned only by number; for a smaller number, that spend more and earn less, do wear out an estate sooner, than a greater number that live lower, and gather more. Therefore the multiplying of nobility, and other degrees of quality, in an over proportion to the common people, doth speedily bring a state to necessity; and so doth likewise an overgrown clergy; for they bring nothing to the stock; and in like manner, when more are bred scholars, than preferments can take off.

It is likewise to be remembered, that forasmuch as the increase of any estate must be upon the foreigner (for whatsoever is somewhere gotten, is somewhere lost), there be but three things, which one nation selleth unto another; the commodity as nature yieldeth it; the manufacture; and the vecture, or carriage. So that if these three wheels go, wealth will flow as in a spring tide. And it cometh many times to pass, that materiam superabit opus; that the work and carriage is more worth than the material, and enricheth a state more; as is notably seen in the Low-Countrymen, who have the best mines above ground, in the world.

Above all things, good policy is to be used, that the treasure and moneys, in a state, be not gathered into few hands. For otherwise a state may have a great stock, and yet starve. And money is like muck, not good except it be spread. This is done, chiefly by suppressing, or at least keeping a strait hand, upon the devouring trades of usury, ingrossing great pasturages, and the like.

For removing discontentments, or at least the danger of them; there is in every state (as we know) two portions of subjects; the noblesse and the commonalty. When one of these is discontent, the danger is not great; for common people are of slow motion, if they be not excited by the greater sort; and the greater sort are of small strength, except the multitude be apt, and ready to move of themselves. Then is the danger, when the greater sort, do but wait for

the troubling of the waters amongst the meaner, that then they may declare themselves. The poets feign, that the rest of the gods would have bound Jupiter; which he hearing of, by the counsel of Pallas, sent for Briareus, with his hundred hands, to come in to his aid. An emblem, no doubt, to show how safe it is for monarchs, to make sure of the good will of common people. To give moderate liberty for griefs and discontentments to evaporate (so it be without too great insolency or bravery), is a safe way. For he that turneth the humors back, and maketh the wound bleed inwards, endangereth malign ulcers, and pernicious imposthumations.

The part of Epimetheus mought well become Prometheus, in the case of discontentments: for there is not a better provision against them. Epimetheus, when griefs and evils flew abroad, at last shut the lid, and kept hope in the bottom of the vessel. Certainly, the politic and artificial nourishing, and entertaining of hopes, and carrying men from hopes to hopes, is one of the best antidotes against the poison of discontentments. And it is a certain sign of a wise government and proceeding, when it can hold men's hearts by hopes, when it cannot by satisfaction; and when it can handle things, in such manner, as no evil shall appear so peremptory, but that it hath some outlet of hope; which is the less hard to do, because both particular persons and factions, are apt enough to flatter themselves, or at least to brave that, which they believe not.

Also the foresight and prevention, that there be no likely or fit head, whereunto discontented persons may resort, and under whom they may join, is a known, but an excellent point of caution. I understand a fit head, to be one that hath greatness and reputation; that hath confidence with the discontented party, and upon whom they turn their eyes; and that is thought discontented, in his own particular: which kind of persons, are either to be won, and reconciled to the state, and that in a fast and true manner; or to be fronted with some other, of the same party, that may oppose them, and so divide the reputation. Generally, the dividing and breaking, of all factions and combinations that are adverse to the state, and setting them at distance, or at least distrust, amongst themselves, is not one of the worst remedies. For it is a desperate case, if those that hold with the

proceeding of the state, be full of discord and faction, and those that are against it, be entire and united.

I have noted, that some witty and sharp speeches, which have fallen from princes, have given fire to seditions. Caesar did himself infinite hurt in that speech, Sylla nescivit literas, non potuit dictare; for it did utterly cut off that hope, which men had entertained, that he would at one time or other give over his dictatorship. Galba undid himself by that speech, legi a se militem, non emi; for it put the soldiers out of hope of the donative. Probus likewise, by that speech, Si vixero, non opus erit amplius Romano imperio militibus; a speech of great despair for the soldiers. And many the like. Surely princes had need, in tender matters and ticklish times, to beware what they say; especially in these short speeches, which fly abroad like darts, and are thought to be shot out of their secret intentions. For as for large discourses, they are flat things, and not so much noted.

Lastly, let princes, against all events, not be without some great person, one or rather more, of military valor, near unto them, for the repressing of seditions in their beginnings. For without that, there useth to be more trepidation in court upon the first breaking out of troubles, than were fit. And the state runneth the danger of that which Tacitus saith; Atque is habitus animorum fuit, ut pessimum facinus auderent pauci, plures vellent, omnes paterentur. But let such military persons be assured, and well reputed of, rather than factious and popular; holding also good correspondence with the other great men in the state; or else the remedy, is worse than the disease.

Of Atheism

I HAD rather believe all the fables in the Legend, and the Talmud, and the Alcoran, than that this universal frame is without a mind. And therefore, God never wrought miracle, to convince atheism, because his ordinary works convince it. It is true, that a little philosophy inclineth man's mind to atheism; but depth in philosophy bringeth men's minds about to religion. For while the mind of man looketh upon second causes scattered, it may sometimes rest in them, and go no further; but when it beholdeth the chain of them, confederate and linked together, it must needs fly to Providence and Deity. Nay, even that school which is most accused of atheism doth most demonstrate religion; that is, the school of Leucippus and Democritus and Epicurus. For it is a thousand times more credible, that four mutable elements, and one immutable fifth essence, duly and eternally placed, need no God, than that an army of infinite small portions, or seeds unplaced, should have produced this order and beauty, without a divine marshal. The Scripture saith, The fool hath said in his heart, there is no God; it is not said, The fool hath thought in his heart; so as he rather saith it, by rote to himself, as that he would have, than that he can thoroughly believe it, or be persuaded of it. For none deny, there is a God, but those, for whom it maketh that there were no God. It appeareth in nothing more, that atheism is rather in the lip, than in the heart of man, than by this; that atheists will ever be talking of that their opinion, as if they fainted in it, within themselves, and would be glad to be strengthened, by the consent of others. Nay more, you shall have atheists strive to get disciples, as it fareth with other sects. And, which is most of all, you shall have of them, that will suffer for atheism, and not recant; whereas if they did truly think, that there were no such thing as God, why should they trouble themselves? Epicurus is charged, that he did but dissemble for his credit's sake, when he affirmed there were blessed natures, but such as enjoyed themselves, without having respect to the government of the world. Wherein they say he did temporize; though in secret, he thought there was no God. But certainly he is

traduced; for his words are noble and divine: Non deos vulgi negare profanum; sed vulgi opiniones diis applicare profanum. Plato could have said no more. And although he had the confidence, to deny the administration, he had not the power, to deny the nature. The Indians of the West, have names for their particular gods, though they have no name for God: as if the heathens should have had the names Jupiter, Apollo, Mars, etc., but not the word Deus; which shows that even those barbarous people have the notion, though they have not the latitude and extent of it. So that against atheists, the very savages take part, with the very subtlest philosophers. The contemplative atheist is rare: a Diagoras, a Bion, a Lucian perhaps, and some others; and yet they seem to be more than they are; for that all that impugn a received religion, or superstition, are by the adverse part branded with the name of atheists. But the great atheists, indeed are hypocrites; which are ever handling holy things, but without feeling; so as they must needs be cauterized in the end. The causes of atheism are: divisions in religion, if they be many; for any one main division, addeth zeal to both sides; but many divisions introduce atheism. Another is, scandal of priests; when it is come to that which St. Bernard saith, non est jam dicere, ut populus sic sacerdos; quia nec sic populus ut sacerdos. A third is, custom of profane scoffing in holy matters; which doth, by little and little, deface the reverence of religion. And lastly, learned times, specially with peace and prosperity; for troubles and adversities do more bow men's minds to religion. They that deny a God, destroy man's nobility; for certainly man is of kin to the beasts, by his body; and, if he be not of kin to God, by his spirit, he is a base and ignoble creature. It destroys likewise magnanimity, and the raising of human nature; for take an example of a dog, and mark what a generosity and courage he will put on, when he finds himself maintained by a man; who to him is instead of a God, or melior natura; which courage is manifestly such, as that creature, without that confidence of a better nature than his own, could never attain. So man, when he resteth and assureth himself, upon divine protection and favor, gathered a force and faith, which human nature in itself could not obtain. Therefore, as atheism is in all respects hateful, so in this, that it depriveth human nature of the means to

exalt itself, above human frailty. As it is in particular persons, so it is in nations. Never was there such a state for magnanimity as Rome. Of this state hear what Cicero saith: Quam volumus licet, patres conscripti, nos amemus, tamen nec numero Hispanos, nec robore Gallos, nec calliditate Poenos, nec artibus Graecos, nec denique hoc ipso hujus gentis et terrae domestico nativoque sensu Italos ipsos et Latinos; sed pietate, ac religione, atque hac una sapientia, quod deorum immortalium numine omnia regi gubernarique perspeximus, omnes gentes nationesque superavimus.

Of Superstition

IT WERE better to have no opinion of God at all, than such an opinion, as is unworthy of him. For the one is unbelief, the other is contumely; and certainly superstition is the reproach of the Deity. Plutarch saith well to that purpose: Surely (saith he) I had rather a great deal, men should say, there was no such man at all, as Plutarch, than that they should say, that there was one Plutarch, that would eat his children as soon as they were born; as the poets speak of Saturn. And as the contumely is greater towards God, so the danger is greater towards men. Atheism leaves a man to sense, to philosophy, to natural piety, to laws, to reputation; all which may be guides to an outward moral virtue, though religion were not; but superstition dismounts all these, and erecteth an absolute monarchy, in the minds of men. Therefore atheism did never perturb states; for it makes men wary of themselves, as looking no further: and we see the times inclined to atheism (as the time of Augustus Caesar) were civil times. But superstition hath been the confusion of many states, and bringeth in a new primum mobile, that ravisheth all the spheres of government. The master of superstition, is the people; and in all superstition, wise men follow fools; and arguments are fitted to practice, in a reversed order. It was gravely said by some of the prelates in the Council of Trent, where the doctrine of the Schoolmen bare great sway, that the Schoolmen were like astronomers, which did feign eccentrics and epicycles, and such engines of orbs, to save the phenomena; though they knew there were no such things; and in like manner, that the Schoolmen had framed a number of subtle and intricate axioms, and theorems, to save the practice of the church. The causes of superstition are: pleasing and sensual rites and ceremonies; excess of outward and pharisaical holiness; overgreat reverence of traditions, which cannot but load the church; the stratagems of prelates, for their own ambition and lucre; the favoring too much of good intentions, which openeth the gate to conceits and novelties; the taking an aim at divine matters, by human, which cannot but breed mixture of

imaginations: and, lastly, barbarous times, especially joined with calamities and disasters. Superstition, without a veil, is a deformed thing; for, as it addeth deformity to an ape, to be so like a man, so the similitude of superstition to religion, makes it the more deformed. And as wholesome meat corrupteth to little worms, so good forms and orders corrupt, into a number of petty observances. There is a superstition in avoiding superstition, when men think to do best, if they go furthest from the superstition, formerly received; therefore care would be had that (as it fareth in ill purgings) the good be not taken away with the bad; which commonly is done, when the people is the reformer.

Of Travel

TRAVEL, in the younger sort, is a part of education, in the elder, a part of experience. He that travelleth into a country, before he hath some entrance into the language, goeth to school, and not to travel. That young men travel under some tutor, or grave servant, I allow well; so that he be such a one that hath the language, and hath been in the country before; whereby he may be able to tell them what things are worthy to be seen, in the country where they go; what acquaintances they are to seek; what exercises, or discipline, the place yieldeth. For else, young men shall go hooded, and look abroad little. It is a strange thing, that in sea voyages, where there is nothing to be seen, but sky and sea, men should make diaries; but in land-travel, wherein so much is to be observed, for the most part they omit it; as if chance were fitter to be registered, than observation. Let diaries, therefore, be brought in use. The things to be seen and observed are: the courts of princes, especially when they give audience to ambassadors; the courts of justice, while they sit and hear causes; and so of consistories ecclesiastic; the churches and monasteries, with the monuments which are therein extant; the walls and fortifications of cities, and towns, and so the heavens and harbors; antiquities and ruins; libraries; colleges, disputations, and lectures, where any are; shipping and navies; houses and gardens of state and pleasure, near great cities; armories; arsenals; magazines; exchanges; burses; warehouses; exercises of horsemanship, fencing, training of soldiers, and the like; comedies, such whereunto the better sort of persons do resort; treasuries of jewels and robes; cabinets and rarities; and, to conclude, whatsoever is memorable, in the places where they go. After all which, the tutors, or servants, ought to make diligent inquiry. As for triumphs, masks, feasts, weddings, funerals, capital executions, and such shows, men need not to be put in mind of them; yet are they not to be neglected. If you will have a young man to put his travel into a little room, and in short time to gather much, this you must do. First, as was said, he must have some entrance into the language before he goeth. Then

he must have such a servant, or tutor, as knoweth the country, as was likewise said. Let him carry with him also, some card or book, describing the country where he travelleth; which will be a good key to his inquiry. Let him keep also a diary. Let him not stay long, in one city or town; more or less as the place deserveth, but not long; nay, when he stayeth in one city or town, let him change his lodging from one end and part of the town, to another; which is a great adamant of acquaintance. Let him sequester himself, from the company of his countrymen, and diet in such places, where there is good company of the nation where he travelleth. Let him, upon his removes from one place to another, procure recommendation to some person of quality, residing in the place whither he removeth; that he may use his favor, in those things he desireth to see or know. Thus he may abridge his travel, with much profit. As for the acquaintance, which is to be sought in travel; that which is most of all profitable, is acquaintance with the secretaries and employed men of ambassadors: for so in travelling in one country, he shall suck the experience of many. Let him also see, and visit, eminent persons in all kinds, which are of great name abroad; that he may be able to tell, how the life agreeth with the fame. For quarrels, they are with care and discretion to be avoided. They are commonly for mistresses, healths, place, and words. And let a man beware, how he keepeth company with choleric and quarrelsome persons; for they will engage him into their own quarrels. When a traveller returneth home, let him not leave the countries, where he hath travelled, altogether behind him; but maintain a correspondence by letters, with those of his acquaintance, which are of most worth. And let his travel appear rather in his discourse, than his apparel or gesture; and in his discourse, let him be rather advised in his answers, than forward to tell stories; and let it appear that he doth not change his country manners, for those of foreign parts; but only prick in some flowers, of that he hath learned abroad, into the customs of his own country.

Of Empire

IT IS a miserable state of mind, to have few things to desire, and many things to fear; and yet that commonly is the case of kings; who, being at the highest, want matter of desire, which makes their minds more languishing; and have many representations of perils and shadows, which makes their minds the less clear. And this is one reason also, of that effect which the Scripture speaketh of, That the king's heart is inscrutable. For multitude of jealousies, and lack of some predominant desire, that should marshal and put in order all the rest, maketh any man's heart, hard to find or sound. Hence it comes likewise, that princes many times make themselves desires, and set their hearts upon toys; sometimes upon a building; sometimes upon erecting of an order; sometimes upon the advancing of a person; sometimes upon obtaining excellency in some art, or feat of the hand; as Nero for playing on the harp, Domitian for certainty of the hand with the arrow, Commodus for playing at fence, Caracalla for driving chariots, and the like. This seemeth incredible, unto those that know not the principle, that the mind of man, is more cheered and refreshed by profiting in small things, than by standing at a stay, in great. We see also that kings that have been fortunate conquerors, in their first years, it being not possible for them to go forward infinitely, but that they must have some check, or arrest in their fortunes, turn in their latter years to be superstitious, and melancholy; as did Alexander the Great; Diocletian; and in our memory, Charles the Fifth; and others: for he that is used to go forward, and findeth a stop, falleth out of his own favor, and is not the thing he was.

To speak now of the true temper of empire, it is a thing rare and hard to keep; for both temper, and distemper, consist of contraries. But it is one thing, to mingle contraries, another to interchange them. The answer of Apollonius to Vespasian, is full of excellent instruction. Vespasian asked him, What was Nero's overthrow? He answered, Nero could touch and tune the harp well; but in government, sometimes he used to wind the pins too high, sometimes to let them

down too low. And certain it is, that nothing destroyeth authority so much, as the unequal and untimely interchange of power pressed too far, and relaxed too much.

This is true, that the wisdom of all these latter times, in princes' affairs, is rather fine deliveries, and shiftings of dangers and mischiefs, when they are near, than solid and grounded courses to keep them aloof. But this is but to try masteries with fortune. And let men beware, how they neglect and suffer matter of trouble to be prepared; for no man can forbid the spark, nor tell whence it may come. The difficulties in princes' business are many and great; but the greatest difficulty, is often in their own mind. For it is common with princes (saith Tacitus) to will contradictories, Sunt plerumque regum voluntates vehementes, et inter se contrariae. For it is the solecism of power, to think to command the end, and yet not to endure the mean.

Kings have to deal with their neighbors, their wives, their children, their prelates or clergy, their nobles, their second-nobles or gentlemen, their merchants, their commons, and their men of war; and from all these arise dangers, if care and circumspection be not used.

First for their neighbors; there can no general rule be given (for occasions are so variable), save one, which ever holdeth, which is, that princes do keep due sentinel, that none of their neighbors do ever grow so (by increase of territory, by embracing of trade, by approaches, or the like), as they become more able to annoy them, than they were. And this is generally the work of standing counsels, to foresee and to hinder it. During that triumvirate of kings, King Henry the Eighth of England, Francis the First King of France, and Charles the Fifth Emperor, there was such a watch kept, that none of the three could win a palm of ground, but the other two would straightways balance it, either by confederation, or, if need were, by a war; and would not in any wise take up peace at interest. And the like was done by that league (which Guicciardini saith was the security of Italy) made between Ferdinando King of Naples, Lorenzius Medici, and Ludovicus Sforza, potentates, the one of Florence, the other of Milan. Neither is the opinion of some of the Schoolmen, to be received, that a war cannot justly be

made, but upon a precedent injury or provocation. For there is no question, but a just fear of an imminent danger, though there be no blow given, is a lawful cause of a war.

For their wives; there are cruel examples of them. Livia is infamed, for the poisoning of her husband; Roxalana, Solyman's wife, was the destruction of that renowned prince, Sultan Mustapha, and otherwise troubled his house and succession; Edward the Second of England, his queen, had the principal hand in the deposing and murder of her husband. This kind of danger, is then to be feared chiefly, when the wives have plots, for the raising of their own children; or else that they be advoutresses.

For their children; the tragedies likewise of dangers from them, have been many. And generally, the entering of fathers into suspicion of their children, hath been ever unfortunate. The destruction of Mustapha (that we named before) was so fatal to Solyman's line, as the succession of the Turks, from Solyman until this day, is suspected to be untrue, and of strange blood; for that Selymus the Second, was thought to be suppositious. The destruction of Crispus, a young prince of rare towardness, by Constantinus the Great, his father, was in like manner fatal to his house; for both Constantinus and Constance, his sons, died violent deaths; and Constantius, his other son, did little better; who died indeed of sickness, but after that Julianus had taken arms against him. The destruction of Demetrius, son to Philip the Second of Macedon, turned upon the father, who died of repentance. And many like examples there are; but few or none, where the fathers had good by such distrust; except it were, where the sons were up in open arms against them; as was Selymus the First against Bajazet; and the three sons of Henry the Second, King of England.

For their prelates; when they are proud and great, there is also danger from them; as it was in the times of Anselmus, and Thomas Becket, Archbishops of Canterbury; who, with their croziers, did almost try it with the king's sword; and yet they had to deal with stout and haughty kings, William Rufus, Henry the First, and Henry the Second. The danger is not from that state, but where it hath

a dependence of foreign authority; or where the churchmen come in and are elected, not by the collation of the king, or particular patrons, but by the people.

For their nobles; to keep them at a distance, it is not amiss; but to depress them, may make a king more absolute, but less safe; and less able to perform, any thing that he desires. I have noted it, in my History of King Henry the Seventh of England, who depressed his nobility; whereupon it came to pass, that his times were full of difficulties and troubles; for the nobility, though they continued loyal unto him, yet did they not co-operate with him in his business. So that in effect, he was fain to do all things himself.

For their second-nobles; there is not much danger from them, being a body dispersed. They may sometimes discourse high, but that doth little hurt; besides, they are a counterpoise to the higher nobility, that they grow not too potent; and, lastly, being the most immediate in authority, with the common people, they do best temper popular commotions.

For their merchants; they are vena porta; and if they flourish not, a kingdom may have good limbs, but will have empty veins, and nourish little. Taxes and imposts upon them, do seldom good to the king's revenue; for that that he wins in the hundred, he leeseth in the shire; the particular rates being increased, but the total bulk of trading, rather decreased.

For their commons; there is little danger from them, except it be, where they have great and potent heads; or where you meddle with the point of religion, or their customs, or means of life.

For their men of war; it is a dangerous state, where they live and remain in a body, and are used to donatives; whereof we see examples in the janizaries, and pretorian bands of Rome; but trainings of men, and arming them in several places, and under several commanders, and without donatives, are things of defence, and no danger.

Princes are like to heavenly bodies, which cause good or evil times; and which have much veneration, but no rest. All precepts concerning kings, are in effect comprehended in those two remembrances: memento quod es homo; and

memento quod es Deus, or vice Dei; the one bridleth their power, and the other their will.

Of Counsel

THE greatest trust, between man and man, is the trust of giving counsel. For in other confidences, men commit the parts of life; their lands, their goods, their children, their credit, some particular affair; but to such as they make their counsellors, they commit the whole: by how much the more, they are obliged to all faith and integrity. The wisest princes need not think it any diminution to their greatness, or derogation to their sufficiency, to rely upon counsel. God himself is not without, but hath made it one of the great names of his blessed Son: The Counsellor. Solomon hath pronounced, that in counsel is stability. Things will have their first, or second agitation: if they be not tossed upon the arguments of counsel, they will be tossed upon the waves of fortune; and be full of inconstancy, doing and undoing, like the reeling of a drunken man. Solomon's son found the force of counsel, as his father saw the necessity of it. For the beloved kingdom of God, was first rent, and broken, by ill counsel; upon which counsel, there are set for our instruction, the two marks whereby bad counsel is for ever best discerned; that it was young counsel, for the person; and violent counsel, for the matter.

The ancient times, do set forth in figure, both the incorporation, and inseparable conjunction, of counsel with kings, and the wise and politic use of counsel by kings: the one, in that they say Jupiter did marry Metis, which signifieth counsel; whereby they intend that Sovereignty, is married to Counsel: the other in that which followeth, which was thus: They say, after Jupiter was married to Metis, she conceived by him, and was with child, but Jupiter suffered her not to stay, till she brought forth, but eat her up; whereby he became himself with child, and was delivered of Pallas armed, out of his head. Which monstrous fable containeth a secret of empire; how kings are to make use of their counsel of state. That first, they ought to refer matters unto them, which is the first begetting, or impregnation; but when they are elaborate, moulded, and shaped in the womb of their counsel, and grow ripe, and ready to be brought forth, that

then they suffer not their counsel to go through with the resolution and direction, as if it depended on them; but take the matter back into their own hands, and make it appear to the world, that the decrees and final directions (which, because they come forth, with prudence and power, are resembled to Pallas armed) proceeded from themselves; and not only from their authority, but (the more to add reputation to themselves) from their head and device.

Let us now speak of the inconveniences of counsel, and of the remedies. The inconveniences that have been noted, in calling and using counsel, are three. First, the revealing of affairs, whereby they become less secret. Secondly, the weakening of the authority of princes, as if they were less of themselves. Thirdly, the danger of being unfaithfully counselled, and more for the good of them that counsel, than of him that is counselled. For which inconveniences, the doctrine of Italy, and practice of France, in some kings' times, hath introduced cabinet counsels; a remedy worse than the disease.

As to secrecy; princes are not bound to communicate all matters, with all counsellors; but may extract and select. Neither is it necessary, that he that consulteth what he should do, should declare what he will do. But let princes beware, that the unsecreting of their affairs, comes not from themselves. And as for cabinet counsels, it may be their motto, plenus rimarum sum: one futile person, that maketh it his glory to tell, will do more hurt than many, that know it their duty to conceal. It is true there be some affairs, which require extreme secrecy, which will hardly go beyond one or two persons, besides the king: neither are those counsels unprosperous; for, besides the secrecy, they commonly go on constantly, in one spirit of direction, without distraction. But then it must be a prudent king, such as is able to grind with a handmill; and those inward counsellors had need also be wise men, and especially true and trusty to the king's ends; as it was with King Henry the Seventh of England, who, in his great business, imparted himself to none, except it were to Morton and Fox.

For weakening of authority; the fable showeth the remedy. Nay, the majesty of kings, is rather exalted than diminished, when they are in the chair of counsel; neither was there ever prince, bereaved of his dependences, by his counsel,

except where there hath been, either an over-greatness in one counsellor, or an over-strict combination in divers; which are things soon found, and holpen.

For the last inconvenience, that men will counsel, with an eye to themselves; certainly, non inveniet fidem super terram is meant, of the nature of times, and not of all particular persons. There be, that are in nature faithful, and sincere, and plain, and direct; not crafty and involved; let princes, above all, draw to themselves such natures. Besides, counsellors are not commonly so united, but that one counsellor, keepeth sentinel over another; so that if any do counsel out of faction or private ends, it commonly comes to the king's ear. But the best remedy is, if princes know their counsellors, as well as their counsellors know them:

Principis est virtus maxima nosse suos.

And on the other side, counsellors should not be too speculative into their sovereign's person. The true composition of a counsellor, is rather to be skilful in their master's business, than in his nature; for then he is like to advise him, and not feed his humor. It is of singular use to princes, if they take the opinions of their counsel, both separately and together. For private opinion is more free; but opinion before others, is more reverent. In private, men are more bold in their own humors; and in consort, men are more obnoxious to others' humors; therefore it is good to take both; and of the inferior sort, rather in private, to preserve freedom; of the greater, rather in consort, to preserve respect. It is in vain for princes, to take counsel concerning matters, if they take no counsel likewise concerning persons; for all matters are as dead images; and the life of the execution of affairs, resteth in the good choice of persons. Neither is it enough, to consult concerning persons secundum genera, as in an idea, or mathematical description, what the kind and character of the person should be; for the greatest errors are committed, and the most judgment is shown, in the choice of individuals. It was truly said, optimi consiliarii mortui: books will speak plain, when counsellors blanch. Therefore it is good to be conversant in them, specially the books of such as themselves have been actors upon the stage.

The counsels at this day, in most places, are but familiar meetings, where matters are rather talked on, than debated. And they run too swift, to the order, or act, of counsel. It were better that in causes of weight, the matter were propounded one day, and not spoken to till the next day; in nocte consilium. So was it done in the Commission of Union, between England and Scotland; which was a grave and orderly assembly. I commend set days for petitions; for both it gives the suitors more certainty for their attendance, and it frees the meetings for matters of estate, that they may hoc agere. In choice of committees; for ripening business for the counsel, it is better to choose indifferent persons, than to make an indifferency, by putting in those, that are strong on both sides. I commend also standing commissions; as for trade, for treasure, for war, for suits, for some provinces; for where there be divers particular counsels, and but one counsel of estate (as it is in Spain), they are, in effect, no more than standing commissions: save that they have greater authority. Let such as are to inform counsels, out of their particular professions (as lawyers, seamen, mintmen, and the like) be first heard before committees; and then, as occasion serves, before the counsel. And let them not come in multitudes, or in a tribunitious manner; for that is to clamor counsels, not to inform them. A long table and a square table, or seats about the walls, seem things of form, but are things of substance; for at a long table a few at the upper end, in effect, sway all the business; but in the other form, there is more use of the counsellors' opinions, that sit lower. A king, when he presides in counsel, let him beware how he opens his own inclination too much, in that which he propoundeth; for else counsellors will but take the wind of him, and instead of giving free counsel, sing him a song of placebo.

Of Delays

FORTUNE is like the market; where many times if you can stay a little, the price will fall. Again, it is sometimes like Sibylla's offer; which at first, offereth the commodity at full, then consumeth part and part, and still holdeth up the price. For occasion (as it is in the common verse) turneth a bald noddle, after she hath presented her locks in front, and no hold taken; or at least turneth the handle of the bottle, first to be received, and after the belly, which is hard to clasp. There is surely no greater wisdom, than well to time the beginnings, and onsets, of things. Dangers are no more light, if they once seem light; and more dangers have deceived men, than forced them. Nay, it were better, to meet some dangers half way, though they come nothing near, than to keep too long a watch upon their approaches; for if a man watch too long, it is odds he will fall asleep. On the other side, to be deceived with too long shadows (as some have been, when the moon was low, and shone on their enemies' back), and so to shoot off before the time; or to teach dangers to come on, by over early buckling towards them; is another extreme. The ripeness, or unripeness, of the occasion (as we said) must ever be well weighed; and generally it is good, to commit the beginnings of all great actions to Argus, with his hundred eyes, and the ends to Briareus, with his hundred hands; first to watch, and then to speed. For the helmet of Pluto, which maketh the politic man go invisible, is secrecy in the counsel, and celerity in the execution. For when things are once come to the execution, there is no secrecy, comparable to celerity; like the motion of a bullet in the air, which flieth so swift, as it outruns the eye.

Of Cunning

WE TAKE cunning for a sinister or crooked wisdom. And certainly there is a great difference, between a cunning man, and a wise man; not only in point of honesty, but in point of ability. There be, that can pack the cards, and yet cannot play well; so there are some that are good in canvasses and factions, that are otherwise weak men. Again, it is one thing to understand persons, and another thing to understand matters; for many are perfect in men's humors, that are not greatly capable of the real part of business; which is the constitution of one that hath studied men, more than books. Such men are fitter for practice, than for counsel; and they are good, but in their own alley: turn them to new men, and they have lost their aim; so as the old rule, to know a fool from a wise man, Mitte ambos nudos ad ignotos, et videbis, doth scarce hold for them. And because these cunning men, are like haberdashers of small wares, it is not amiss to set forth their shop.

It is a point of cunning, to wait upon him with whom you speak, with your eye; as the Jesuits give it in precept: for there be many wise men, that have secret hearts, and transparent countenances. Yet this would be done with a demure abasing of your eye, sometimes, as the Jesuits also do use.

Another is, that when you have anything to obtain, of present despatch, you entertain and amuse the party, with whom you deal, with some other discourse; that he be not too much awake to make objections. I knew a counsellor and secretary, that never came to Queen Elizabeth of England, with bills to sign, but he would always first put her into some discourse of estate, that she mought the less mind the bills.

The like surprise may be made by moving things, when the party is in haste, and cannot stay to consider advisedly of that is moved.

If a man would cross a business, that he doubts some other would handsomely and effectually move, let him pretend to wish it well, and move it himself in such sort as may foil it.

The breaking off, in the midst of that one was about to say, as if he took himself up, breeds a greater appetite in him with whom you confer, to know more.

And because it works better, when anything seemeth to be gotten from you by question, than if you offer it of yourself, you may lay a bait for a question, by showing another visage, and countenance, than you are wont; to the end to give occasion, for the party to ask, what the matter is of the change? As Nehemias did; And I had not before that time, been sad before the king.

In things that are tender and unpleasing, it is good to break the ice, by some whose words are of less weight, and to reserve the more weighty voice, to come in as by chance, so that he may be asked the question upon the other's speech: as Narcissus did, relating to Claudius the marriage of Messalina and Silius.

In things that a man would not be seen in himself, it is a point of cunning, to borrow the name of the world; as to say, The world says, or There is a speech abroad.

I knew one that, when he wrote a letter, he would put that, which was most material, in the postscript, as if it had been a by-matter.

I knew another that, when he came to have speech, he would pass over that, that he intended most; and go forth, and come back again, and speak of it as of a thing, that he had almost forgot.

Some procure themselves, to be surprised, at such times as it is like the party that they work upon, will suddenly come upon them; and to be found with a letter in their hand, or doing somewhat which they are not accustomed; to the end, they may be apposed of those things, which of themselves they are desirous to utter.

It is a point of cunning, to let fall those words in a man's own name, which he would have another man learn, and use, and thereupon take advantage. I knew two, that were competitors for the secretary's place in Queen Elizabeth's time, and yet kept good quarter between themselves; and would confer, one with another, upon the business; and the one of them said, That to be a secretary, in the declination of a monarchy, was a ticklish thing, and that he did not affect it:

the other straight caught up those words, and discoursed with divers of his friends, that he had no reason to desire to be secretary, in the declination of a monarchy. The first man took hold of it, and found means it was told the Queen; who, hearing of a declination of a monarchy, took it so ill, as she would never after hear of the other's suit.

There is a cunning, which we in England call, the turning of the cat in the pan; which is, when that which a man says to another, he lays it as if another had said it to him. And to say truth, it is not easy, when such a matter passed between two, to make it appear from which of them it first moved and began.

It is a way that some men have, to glance and dart at others, by justifying themselves by negatives; as to say, This I do not; as Tigellinus did towards Burrhus, Se non diversas spes, sed incolumitatem imperatoris simpliciter spectare.

Some have in readiness so many tales and stories, as there is nothing they would insinuate, but they can wrap it into a tale; which serveth both to keep themselves more in guard, and to make others carry it with more pleasure. It is a good point of cunning, for a man to shape the answer he would have, in his own words and propositions; for it makes the other party stick the less.

It is strange how long some men will lie in wait to speak somewhat they desire to say; and how far about they will fetch; and how many other matters they will beat over, to come near it. It is a thing of great patience, but yet of much use.

A sudden, bold, and unexpected question doth many times surprise a man, and lay him open. Like to him that, having changed his name, and walking in Paul's, another suddenly came behind him, and called him by his true name, whereat straightways he looked back.

But these small wares, and petty points, of cunning, are infinite; and it were a good deed to make a list of them; for that nothing doth more hurt in a state, than that cunning men pass for wise.

But certainly some there are that know the resorts and falls of business, that cannot sink into the main of it; like a house that hath convenient stairs and

entries, but never a fair room. Therefore, you shall see them find out pretty looses in the conclusion, but are no ways able to examine or debate matters. And yet commonly they take advantage of their inability, and would be thought wits of direction. Some build rather upon the abusing of others, and (as we now say) putting tricks upon them, than upon soundness of their own proceedings. But Solomon saith, Prudens advertit ad gressus suos; stultus divertit ad dolos.

Of Wisdom For A Man's Self

AN ANT is a wise creature for itself, but it is a shrewd thing, in an orchard or garden. And certainly, men that are great lovers of themselves, waste the public. Divide with reason; between self-love and society; and be so true to thyself, as thou be not false to others; specially to thy king and country. It is a poor centre of a man's actions, himself. It is right earth. For that only stands fast upon his own centre; whereas all things, that have affinity with the heavens, move upon the centre of another, which they benefit. The referring of all to a man's self, is more tolerable in a sovereign prince; because themselves are not only themselves, but their good and evil is at the peril of the public fortune. But it is a desperate evil, in a servant to a prince, or a citizen in a republic. For whatsoever affairs pass such a man's hands, he crooketh them to his own ends; which must needs be often eccentric to the ends of his master, or state. Therefore, let princes, or states, choose such servants, as have not this mark; except they mean their service should be made but the accessory. That which maketh the effect more pernicious, is that all proportion is lost. It were disproportion enough, for the servant's good to be preferred before the master's; but yet it is a greater extreme, when a little good of the servant, shall carry things against a great good of the master's. And yet that is the case of bad officers, treasurers, ambassadors, generals, and other false and corrupt servants; which set a bias upon their bowl, of their own petty ends and envies, to the overthrow of their master's great and important affairs. And for the most part, the good such servants receive, is after the model of their own fortune; but the hurt they sell for that good, is after the model of their master's fortune. And certainly it is the nature of extreme self-lovers, as they will set an house on fire, and it were but to roast their eggs; and yet these men many times hold credit with their masters, because their study is but to please them, and profit themselves; and for either respect, they will abandon the good of their affairs.

Wisdom for a man's self is, in many branches thereof, a depraved thing. It is the wisdom of rats, that will be sure to leave a house, somewhat before it fall. It is the wisdom of the fox, that thrusts out the badger, who digged and made room for him. It is the wisdom of crocodiles, that shed tears when they would devour. But that which is specially to be noted is, that those which (as Cicero says of Pompey) are sui amantes, sine rivali, are many times unfortunate. And whereas they have, all their times, sacrificed to themselves, they become in the end, themselves sacrifices to the inconstancy of fortune, whose wings they thought, by their self-wisdom, to have pinioned.

Of Innovations

AS THE births of living creatures, at first are ill-shapen, so are all innovations, which are the births of time. Yet notwithstanding, as those that first bring honor into their family, are commonly more worthy than most that succeed, so the first precedent (if it be good) is seldom attained by imitation. For ill, to man's nature, as it stands perverted, hath a natural motion, strongest in continuance; but good, as a forced motion, strongest at first. Surely every medicine is an innovation; and he that will not apply new remedies, must expect new evils; for time is the greatest innovator; and if time of course alter things to the worse, and wisdom and counsel shall not alter them to the better, what shall be the end? It is true, that what is settled by custom, though it be not good, yet at least it is fit; and those things which have long gone together, are, as it were, confederate within themselves; whereas new things piece not so well; but though they help by their utility, yet they trouble by their inconformity. Besides, they are like strangers; more admired, and less favored. All this is true, if time stood still; which contrariwise moveth so round, that a froward retention of custom, is as turbulent a thing as an innovation; and they that reverence too much old times, are but a scorn to the new. It were good, therefore, that men in their innovations would follow the example of time itself; which indeed innovateth greatly, but quietly, by degrees scarce to be perceived. For otherwise, whatsoever is new is unlooked for; and ever it mends some, and pairs others; and he that is holpen, takes it for a fortune, and thanks the time; and he that is hurt, for a wrong, and imputeth it to the author. It is good also, not to try experiments in states, except the necessity be urgent, or the utility evident; and well to beware, that it be the reformation, that draweth on the change, and not the desire of change, that pretendeth the reformation. And lastly, that the novelty, though it be not rejected, yet be held for a suspect; and, as the Scripture saith, that we make a stand upon the ancient way, and then look about us, and discover what is the straight and right way, and so to walk in it.

Of Dispatch

AFFECTED dispatch is one of the most dangerous things to business that can be. It is like that, which the physicians call predigestion, or hasty digestion; which is sure to fill the body full of crudities, and secret seeds of diseases. Therefore measure not dispatch, by the times of sitting, but by the advancement of the business. And as in races it is not the large stride or high lift that makes the speed; so in business, the keeping close to the matter, and not taking of it too much at once, procureth dispatch. It is the care of some, only to come off speedily for the time; or to contrive some false periods of business, because they may seem men of dispatch. But it is one thing, to abbreviate by contracting, another by cutting off. And business so handled, at several sittings or meetings, goeth commonly backward and forward in an unsteady manner. I knew a wise man that had it for a byword, when he saw men hasten to a conclusion, Stay a little, that we may make an end the sooner.

On the other side, true dispatch is a rich thing. For time is the measure of business, as money is of wares; and business is bought at a dear hand, where there is small dispatch. The Spartans and Spaniards have been noted to be of small dispatch; Mi venga la muerte de Spagna; Let my death come from Spain; for then it will be sure to be long in coming.

Give good hearing to those, that give the first information in business; and rather direct them in the beginning, than interrupt them in the continuance of their speeches; for he that is put out of his own order, will go forward and backward, and be more tedious, while he waits upon his memory, than he could have been, if he had gone on in his own course. But sometimes it is seen, that the moderator is more troublesome, than the actor.

Iterations are commonly loss of time. But there is no such gain of time, as to iterate often the state of the question; for it chaseth away many a frivolous speech, as it is coming forth. Long and curious speeches, are as fit for dispatch, as a robe or mantle, with a long train, is for race. Prefaces and passages, and

excusations, and other speeches of reference to the person, are great wastes of time; and though they seem to proceed of modesty, they are bravery. Yet beware of being too material, when there is any impediment or obstruction in men's wills; for pre-occupation of mind ever requireth preface of speech; like a fomentation to make the unguent enter.

Above all things, order, and distribution, and singling out of parts, is the life of dispatch; so as the distribution be not too subtle: for he that doth not divide, will never enter well into business; and he that divideth too much, will never come out of it clearly. To choose time, is to save time; and an unseasonable motion, is but beating the air. There be three parts of business; the preparation, the debate or examination, and the perfection. Whereof, if you look for dispatch, let the middle only be the work of many, and the first and last the work of few. The proceeding upon somewhat conceived in writing, doth for the most part facilitate dispatch: for though it should be wholly rejected, yet that negative is more pregnant of direction, than an indefinite; as ashes are more generative than dust.

Of Seeming Wise

IT HATH been an opinion, that the French are wiser than they seem, and the Spaniards seem wiser than they are. But howsoever it be between nations, certainly it is so between man and man. For as the Apostle saith of godliness, Having a show of godliness, but denying the power thereof; so certainly there are, in point of wisdom and sufficiency, that do nothing or little very solemnly: magno conatu nugas. It is a ridiculous thing, and fit for a satire to persons of judgment, to see what shifts these formalists have, and what prospectives to make superficies to seem body, that hath depth and bulk. Some are so close and reserved, as they will not show their wares, but by a dark light; and seem always to keep back somewhat; and when they know within themselves, they speak of that they do not well know, would nevertheless seem to others, to know of that which they may not well speak. Some help themselves with countenance and gesture, and are wise by signs; as Cicero saith of Piso, that when he answered him, he fetched one of his brows up to his forehead, and bent the other down to his chin; Respondes, altero ad frontem sublato, altero ad mentum depresso supercilio, crudelitatem tibi non placere. Some think to bear it by speaking a great word, and being peremptory; and go on, and take by admittance, that which they cannot make good. Some, whatsoever is beyond their reach, will seem to despise, or make light of it, as impertinent or curious; and so would have their ignorance seem judgment. Some are never without a difference, and commonly by amusing men with a subtilty, blanch the matter; of whom A. Gellius saith, Hominem delirum, qui verborum minutiis rerum frangit pondera. Of which kind also, Plato, in his Protagoras, bringeth in Prodicus in scorn, and maketh him make a speech, that consisteth of distinction from the beginning to the end. Generally, such men in all deliberations find ease to be of the negative side, and affect a credit to object and foretell difficulties; for when propositions are denied, there is an end of them; but if they be allowed, it requireth a new work; which false point of wisdom is the bane of business. To conclude, there is no

decaying merchant, or inward beggar, hath so many tricks to uphold the credit of their wealth, as these empty persons have, to maintain the credit of their sufficiency. Seeming wise men may make shift to get opinion; but let no man choose them for employment; for certainly you were better take for business, a man somewhat absurd, than over-formal.

Of Friendship

IT HAD been hard for him that spake it to have put more truth and untruth together in few words, than in that speech, Whatsoever is delighted in solitude, is either a wild beast or a god. For it is most true, that a natural and secret hatred, and aversation towards society, in any man, hath somewhat of the savage beast; but it is most untrue, that it should have any character at all, of the divine nature; except it proceed, not out of a pleasure in solitude, but out of a love and desire to sequester a man's self, for a higher conversation: such as is found to have been falsely and feignedly in some of the heathen; as Epimenides the Candian, Numa the Roman, Empedocles the Sicilian, and Apollonius of Tyana; and truly and really, in divers of the ancient hermits and holy fathers of the church. But little do men perceive what solitude is, and how far it extendeth. For a crowd is not company; and faces are but a gallery of pictures; and talk but a tinkling cymbal, where there is no love. The Latin adage meeteth with it a little: Magna civitas, magna solitudo; because in a great town friends are scattered; so that there is not that fellowship, for the most part, which is in less neighborhoods. But we may go further, and affirm most truly, that it is a mere and miserable solitude to want true friends; without which the world is but a wilderness; and even in this sense also of solitude, whosoever in the frame of his nature and affections, is unfit for friendship, he taketh it of the beast, and not from humanity.

A principal fruit of friendship, is the ease and discharge of the fulness and swellings of the heart, which passions of all kinds do cause and induce. We know diseases of stoppings, and suffocations, are the most dangerous in the body; and it is not much otherwise in the mind; you may take sarza to open the liver, steel to open the spleen, flowers of sulphur for the lungs, castoreum for the brain; but no receipt openeth the heart, but a true friend; to whom you may impart griefs, joys, fears, hopes, suspicions, counsels, and whatsoever lieth upon the heart to oppress it, in a kind of civil shrift or confession.

It is a strange thing to observe, how high a rate great kings and monarchs do set upon this fruit of friendship, whereof we speak: so great, as they purchase it, many times, at the hazard of their own safety and greatness. For princes, in regard of the distance of their fortune from that of their subjects and servants, cannot gather this fruit, except (to make themselves capable thereof) they raise some persons to be, as it were, companions and almost equals to themselves, which many times sorteth to inconvenience. The modern languages give unto such persons the name of favorites, or privadoes; as if it were matter of grace, or conversation. But the Roman name attaineth the true use and cause thereof, naming them participes curarum; for it is that which tieth the knot. And we see plainly that this hath been done, not by weak and passionate princes only, but by the wisest and most politic that ever reigned; who have oftentimes joined to themselves some of their servants; whom both themselves have called friends, and allowed other likewise to call them in the same manner; using the word which is received between private men.

L. Sylla, when he commanded Rome, raised Pompey (after surnamed the Great) to that height, that Pompey vaunted himself for Sylla's overmatch. For when he had carried the consulship for a friend of his, against the pursuit of Sylla, and that Sylla did a little resent thereat, and began to speak great, Pompey turned upon him again, and in effect bade him be quiet; for that more men adored the sun rising, than the sun setting. With Julius Caesar, Decimus Brutus had obtained that interest as he set him down in his testament, for heir in remainder, after his nephew. And this was the man that had power with him, to draw him forth to his death. For when Caesar would have discharged the senate, in regard of some ill presages, and specially a dream of Calpurnia; this man lifted him gently by the arm out of his chair, telling him he hoped he would not dismiss the senate, till his wife had dreamt a better dream. And it seemeth his favor was so great, as Antonius, in a letter which is recited verbatim in one of Cicero's Philippics, calleth him venefica, witch; as if he had enchanted Caesar. Augustus raised Agrippa (though of mean birth) to that height, as when he consulted with Maecenas, about the marriage of his daughter Julia, Maecenas

took the liberty to tell him, that he must either marry his daughter to Agrippa, or take away his life; there was no third way, he had made him so great. With Tiberius Caesar, Sejanus had ascended to that height, as they two were termed, and reckoned, as a pair of friends. Tiberius in a letter to him saith, Haec pro amicitia nostra non occultavi; and the whole senate dedicated an altar to Friendship, as to a goddess, in respect of the great dearness of friendship, between them two. The like, or more, was between Septimius Severus and Plautianus. For he forced his eldest son to marry the daughter of Plautianus; and would often maintain Plautianus, in doing affronts to his son; and did write also in a letter to the senate, by these words: I love the man so well, as I wish he may over-live me. Now if these princes had been as a Trajan, or a Marcus Aurelius, a man might have thought that this had proceeded of an abundant goodness of nature; but being men so wise, of such strength and severity of mind, and so extreme lovers of themselves, as all these were, it proveth most plainly that they found their own felicity (though as great as ever happened to mortal men) but as an half piece, except they mought have a friend, to make it entire; and yet, which is more, they were princes that had wives, sons, nephews; and yet all these could not supply the comfort of friendship.

It is not to be forgotten, what Comineus observeth of his first master, Duke Charles the Hardy, namely, that he would communicate his secrets with none; and least of all, those secrets which troubled him most. Whereupon he goeth on, and saith that towards his latter time, that closeness did impair, and a little perish his understanding. Surely Comineus mought have made the same judgment also, if it had pleased him, of his second master, Lewis the Eleventh, whose closeness was indeed his tormentor. The parable of Pythagoras is dark, but true; Cor ne edito; Eat not the heart. Certainly, if a man would give it a hard phrase, those that want friends, to open themselves unto, are cannibals of their own hearts. But one thing is most admirable (wherewith I will conclude this first fruit of friendship), which is, that this communicating of a man’s self to his friend, works two contrary effects; for it redoubleth joys, and cutteth griefs in halves. For there is no man, that imparteth his joys to his friend, but he joyeth the more;

and no man that imparteth his griefs to his friend, but he grieveth the less. So that it is in truth, of operation upon a man's mind, of like virtue as the alchemists use to attribute to their stone, for man's body; that it worketh all contrary effects, but still to the good and benefit of nature. But yet without praying in aid of alchemists, there is a manifest image of this, in the ordinary course of nature. For in bodies, union strengtheneth and cherisheth any natural action; and on the other side, weakeneth and dulleth any violent impression: and even so it is of minds.

The second fruit of friendship, is healthful and sovereign for the understanding, as the first is for the affections. For friendship maketh indeed a fair day in the affections, from storm and tempests; but it maketh daylight in the understanding, out of darkness, and confusion of thoughts. Neither is this to be understood only of faithful counsel, which a man receiveth from his friend; but before you come to that, certain it is, that whosoever hath his mind fraught with many thoughts, his wits and understanding do clarify and break up, in the communicating and discoursing with another; he tosseth his thoughts more easily; he marshalleth them more orderly, he seeth how they look when they are turned into words: finally, he waxeth wiser than himself; and that more by an hour's discourse, than by a day's meditation. It was well said by Themistocles, to the king of Persia, That speech was like cloth of Arras, opened and put abroad; whereby the imagery doth appear in figure; whereas in thoughts they lie but as in packs. Neither is this second fruit of friendship, in opening the understanding, restrained only to such friends as are able to give a man counsel; (they indeed are best;) but even without that, a man learneth of himself, and bringeth his own thoughts to light, and whetteth his wits as against a stone, which itself cuts not. In a word, a man were better relate himself to a statua, or picture, than to suffer his thoughts to pass in smother.

Add now, to make this second fruit of friendship complete, that other point, which lieth more open, and falleth within vulgar observation; which is faithful counsel from a friend. Heraclitus saith well in one of his enigmas, Dry light is ever the best. And certain it is, that the light that a man receiveth by counsel

from another, is drier and purer, than that which cometh from his own understanding and judgment; which is ever infused, and drenched, in his affections and customs. So as there is as much difference between the counsel, that a friend giveth, and that a man giveth himself, as there is between the counsel of a friend, and of a flatterer. For there is no such flatterer as is a man's self; and there is no such remedy against flattery of a man's self, as the liberty of a friend. Counsel is of two sorts: the one concerning manners, the other concerning business. For the first, the best preservative to keep the mind in health, is the faithful admonition of a friend. The calling of a man's self to a strict account, is a medicine, sometime too piercing and corrosive. Reading good books of morality, is a little flat and dead. Observing our faults in others, is sometimes improper for our case. But the best receipt (best, I say, to work, and best to take) is the admonition of a friend. It is a strange thing to behold, what gross errors and extreme absurdities many (especially of the greater sort) do commit, for want of a friend to tell them of them; to the great damage both of their fame and fortune: for, as St. James saith, they are as men that look sometimes into a glass, and presently forget their own shape and favor. As for business, a man may think, if he win, that two eyes see no more than one; or that a gamester seeth always more than a looker-on; or that a man in anger, is as wise as he that hath said over the four and twenty letters; or that a musket may be shot off as well upon the arm, as upon a rest; and such other fond and high imaginations, to think himself all in all. But when all is done, the help of good counsel, is that which setteth business straight. And if any man think that he will take counsel, but it shall be by pieces; asking counsel in one business, of one man, and in another business, of another man; it is well (that is to say, better, perhaps, than if he asked none at all); but he runneth two dangers: one, that he shall not be faithfully counselled; for it is a rare thing, except it be from a perfect and entire friend, to have counsel given, but such as shall be bowed and crooked to some ends, which he hath, that giveth it. The other, that he shall have counsel given, hurtful and unsafe (though with good meaning), and mixed partly of mischief and partly of remedy; even as if you would call a physician, that is

thought good for the cure of the disease you complain of, but is unacquainted with your body; and therefore may put you in way for a present cure, but overthroweth your health in some other kind; and so cure the disease, and kill the patient. But a friend that is wholly acquainted with a man's estate, will beware, by furthering any present business, how he dasheth upon other inconvenience. And therefore rest not upon scattered counsels; they will rather distract and mislead, than settle and direct.

After these two noble fruits of friendship (peace in the affections, and support of the judgment), followeth the last fruit; which is like the pomegranate, full of many kernels; I mean aid, and bearing a part, in all actions and occasions. Here the best way to represent to life the manifold use of friendship, is to cast and see how many things there are, which a man cannot do himself; and then it will appear, that it was a sparing speech of the ancients, to say, that a friend is another himself; for that a friend is far more than himself. Men have their time, and die many times, in desire of some things which they principally take to heart; the bestowing of a child, the finishing of a work, or the like. If a man have a true friend, he may rest almost secure that the care of those things will continue after him. So that a man hath, as it were, two lives in his desires. A man hath a body, and that body is confined to a place; but where friendship is, all offices of life are as it were granted to him, and his deputy. For he may exercise them by his friend. How many things are there which a man cannot, with any face or comeliness, say or do himself? A man can scarce allege his own merits with modesty, much less extol them; a man cannot sometimes brook to supplicate or beg; and a number of the like. But all these things are graceful, in a friend's mouth, which are blushing in a man's own. So again, a man's person hath many proper relations, which he cannot put off. A man cannot speak to his son but as a father; to his wife but as a husband; to his enemy but upon terms: whereas a friend may speak as the case requires, and not as it sorteth with the person. But to enumerate these things were endless; I have given the rule, where a man cannot fitly play his own part; if he have not a friend, he may quit the stage.

Of Expense

RICHES are for spending, and spending for honor and good actions. Therefore extraordinary expense must be limited by the worth of the occasion; for voluntary undoing, may be as well for a man's country, as for the kingdom of heaven. But ordinary expense, ought to be limited by a man's estate; and governed with such regard, as it be within his compass; and not subject to deceit and abuse of servants; and ordered to the best show, that the bills may be less than the estimation abroad. Certainly, if a man will keep but of even hand, his ordinary expenses ought to be but to the half of his receipts; and if he think to wax rich, but to the third part. It is no baseness, for the greatest to descend and look into their own estate. Some forbear it, not upon negligence alone, but doubting to bring themselves into melancholy, in respect they shall find it broken. But wounds cannot be cured without searching. He that cannot look into his own estate at all, had need both choose well those whom he employeth, and change them often; for new are more timorous and less subtle. He that can look into his estate but seldom, it behooveth him to turn all to certainties. A man had need, if he be plentiful in some kind of expense, to be as saving again in some other. As if he be plentiful in diet, to be saving in apparel; if he be plentiful in the hall, to be saving in the stable; and the like. For he that is plentiful in expenses of all kinds, will hardly be preserved from decay. In clearing of a man's estate, he may as well hurt himself in being too sudden, as in letting it run on too long. For hasty selling, is commonly as disadvantageable as interest. Besides, he that clears at once will relapse; for finding himself out of straits, he will revert to his custom: but he that cleareth by degrees, induceth a habit of frugality, and gaineth as well upon his mind, as upon his estate. Certainly, who hath a state to repair, may not despise small things; and commonly it is less dishonorable, to abridge petty charges, than to stoop to petty gettings. A man ought warily to begin charges which once begun will continue; but in matters that return not, he may be more magnificent.

Of the True Greatness Of Kingdoms And Estates

THE speech of Themistocles the Athenian, which was haughty and arrogant, in taking so much to himself, had been a grave and wise observation and censure, applied at large to others. Desired at a feast to touch a lute, he said, He could not fiddle, but yet he could make a small town, a great city. These words (holpen a little with a metaphor) may express two differing abilities, in those that deal in business of estate. For if a true survey be taken of counsellors and statesmen, there may be found (though rarely) those which can make a small state great, and yet cannot fiddle; as on the other side, there will be found a great many, that can fiddle very cunningly, but yet are so far from being able to make a small state great, as their gift lieth the other way; to bring a great and flourishing estate, to ruin and decay. And certainly whose degenerate arts and shifts, whereby many counsellors and governors gain both favor with their masters, and estimation with the vulgar, deserve no better name than fiddling; being things rather pleasing for the time, and graceful to themselves only, than tending to the weal and advancement of the state which they serve. There are also (no doubt) counsellors and governors which may be held sufficient (negotiis pares), able to manage affairs, and to keep them from precipices and manifest inconveniences; which nevertheless are far from the ability to raise and amplify an estate in power, means, and fortune. But be the workmen what they may be, let us speak of the work; that is, the true greatness of kingdoms and estates, and the means thereof. An argument fit for great and mighty princes to have in their hand; to the end that neither by over-measuring their forces, they leese themselves in vain enterprises; nor on the other side, by undervaluing them, they descend to fearful and pusillanimous counsels.

The greatness of an estate, in bulk and territory, doth fall under measure; and the greatness of finances and revenue, doth fall under computation. The population may appear by musters; and the number and greatness of cities and towns by cards and maps. But yet there is not any thing amongst civil affairs

more subject to error, than the right valuation and true judgment concerning the power and forces of an estate. The kingdom of heaven is compared, not to any great kernel or nut, but to a grain of mustard-seed: which is one of the least grains, but hath in it a property and spirit hastily to get up and spread. So are there states, great in territory, and yet not apt to enlarge or command; and some that have but a small dimension of stem, and yet apt to be the foundations of great monarchies.

Walled towns, stored arsenals and armories, goodly races of horse, chariots of war, elephants, ordnance, artillery, and the like; all this is but a sheep in a lion's skin, except the breed and disposition of the people, be stout and warlike. Nay, number (itself) in armies importeth not much, where the people is of weak courage; for (as Virgil saith) It never troubles a wolf, how many the sheep be. The army of the Persians, in the plains of Arbela, was such a vast sea of people, as it did somewhat astonish the commanders in Alexander's army; who came to him therefore, and wished him to set upon them by night; and he answered, He would not pilfer the victory. And the defeat was easy. When Tigranes the Armenian, being encamped upon a hill with four hundred thousand men, discovered the army of the Romans, being not above fourteen thousand, marching towards him, he made himself merry with it, and said, Yonder men are too many for an embassage, and too few for a fight. But before the sun set, he found them enow to give him the chase with infinite slaughter. Many are the examples of the great odds, between number and courage; so that a man may truly make a judgment, that the principal point of greatness in any state, is to have a race of military men. Neither is money the sinews of war (as it is trivially said), where the sinews of men's arms, in base and effeminate people, are failing. For Solon said well to Croesus (when in ostentation he showed him his gold), Sir, if any other come, that hath better iron, than you, he will be master of all this gold. Therefore let any prince or state think solely of his forces, except his militia of natives be of good and valiant soldiers. And let princes, on the other side, that have subjects of martial disposition, know their own strength; unless they be otherwise wanting unto themselves. As for mercenary forces

(which is the help in this case), all examples show, that whatsoever estate or prince doth rest upon them, he may spread his feathers for a time, but he will mew them soon after.

The blessing of Judah and Issachar will never meet; that the same people, or nation, should be both the lion's whelp and the ass between burthens; neither will it be, that a people overlaid with taxes, should ever become valiant and martial. It is true that taxes levied by consent of the estate, do abate men's courage less: as it hath been seen notably, in the excises of the Low Countries; and, in some degree, in the subsidies of England. For you must note, that we speak now of the heart, and not of the purse. So that although the same tribute and tax, laid by consent or by imposing, be all one to the purse, yet it works diversely upon the courage. So that you may conclude, that no people overcharged with tribute, is fit for empire.

Let states that aim at greatness, take heed how their nobility and gentlemen do multiply too fast. For that maketh the common subject, grow to be a peasant and base swain, driven out of heart, and in effect but the gentleman's laborer. Even as you may see in coppice woods; if you leave your staddles too thick, you shall never have clean underwood, but shrubs and bushes. So in countries, if the gentlemen be too many, the commons will be base; and you will bring it to that, that not the hundred poll, will be fit for an helmet; especially as to the infantry, which is the nerve of an army; and so there will be great population, and little strength. This which I speak of, hath been nowhere better seen, than by comparing of England and France; whereof England, though far less in territory and population, hath been (nevertheless) an overmatch; in regard the middle people of England make good soldiers, which the peasants of France do not. And herein the device of king Henry the Seventh (whereof I have spoken largely in the History of his Life) was profound and admirable; in making farms and houses of husbandry of a standard; that is, maintained with such a proportion of land unto them, as may breed a subject to live in convenient plenty and no servile condition; and to keep the plough in the hands of the owners, and not

mere hirelings. And thus indeed you shall attain to Virgil's character which he gives to ancient Italy:

Terra potens armis atque ubere glebae.

Neither is that state (which, for any thing I know, is almost peculiar to England, and hardly to be found anywhere else, except it be perhaps in Poland) to be passed over; I mean the state of free servants, and attendants upon noblemen and gentlemen; which are no ways inferior unto the yeomanry for arms. And therefore out of all questions, the splendor and magnificence, and great retinues and hospitality, of noblemen and gentlemen, received into custom, doth much conduce unto martial greatness. Whereas, contrariwise, the close and reserved living of noblemen and gentlemen, causeth a penury of military forces.

By all means it is to be procured, that the trunk of Nebuchadnezzar's tree of monarchy, be great enough to bear the branches and the boughs; that is, that the natural subjects of the crown or state, bear a sufficient proportion to the stranger subjects, that they govern. Therefore all states that are liberal of naturalization towards strangers, are fit for empire. For to think that an handful of people can, with the greatest courage and policy in the world, embrace too large extent of dominion, it may hold for a time, but it will fail suddenly. The Spartans were a nice people in point of naturalization; whereby, while they kept their compass, they stood firm; but when they did spread, and their boughs were becomen too great for their stem, they became a windfall, upon the sudden. Never any state was in this point so open to receive strangers into their body, as were the Romans. Therefore it sorted with them accordingly; for they grew to the greatest monarchy. Their manner was to grant naturalization (which they called jus civitatis), and to grant it in the highest degree; that is, not only jus commercii, jus connubii, jus haereditatis; but also jus suffragii, and jus honorum. And this not to singular persons alone, but likewise to whole families; yea to cities, and sometimes to nations. Add to this their custom of plantation of colonies; whereby the Roman plant was removed into the soil of other nations. And putting both constitutions together, you will say that it was not the Romans that spread upon the world, but it was the world that spread upon the Romans; and

that was the sure way of greatness. I have marvelled, sometimes, at Spain, how they clasp and contain so large dominions, with so few natural Spaniards; but sure the whole compass of Spain, is a very great body of a tree; far above Rome and Sparta at the first. And besides, though they have not had that usage, to naturalize liberally, yet they have that which is next to it; that is, to employ, almost indifferently, all nations in their militia of ordinary soldiers; yea, and sometimes in their highest commands. Nay, it seemeth at this instant they are sensible, of this want of natives; as by the Pragmatical Sanction, now published, appeareth.

It is certain that sedentary, and within-door arts, and delicate manufactures (that require rather the finger than the arm), have, in their nature, a contrariety to a military disposition. And generally, all warlike people are a little idle, and love danger better than travail. Neither must they be too much broken of it, if they shall be preserved in vigor. Therefore it was great advantage, in the ancient states of Sparta, Athens, Rome, and others, that they had the use of slaves, which commonly did rid those manufactures. But that is abolished, in greatest part, by the Christian law. That which cometh nearest to it, is to leave those arts chiefly to strangers (which, for that purpose, are the more easily to be received), and to contain the principal bulk of the vulgar natives, within those three kinds, — tillers of the ground; free servants; and handicraftsmen of strong and manly arts, as smiths, masons, carpenters, etc.; not reckoning professed soldiers.

But above all, for empire and greatness, it importeth most, that a nation do profess arms, as their principal honor, study, and occupation. For the things which we formerly have spoken of, are but habilitations towards arms; and what is habilitation without intention and act? Romulus, after his death (as they report or feign), sent a present to the Romans, that above all, they should intend arms; and then they should prove the greatest empire of the world. The fabric of the state of Sparta was wholly (though not wisely) framed and composed, to that scope and end. The Persians and Macedonians had it for a flash. The Gauls, Germans, Goths, Saxons, Normans, and others, had it for a time. The Turks have it at this day, though in great declination. Of Christian Europe, they that have it

are, in effect, only the Spaniards. But it is so plain, that every man profiteth in that, he most intendeth, that it needeth not to be stood upon. It is enough to point at it; that no nation which doth not directly profess arms, may look to have greatness fall into their mouths. And on the other side, it is a most certain oracle of time, that those states that continue long in that profession (as the Romans and Turks principally have done) do wonders. And those that have professed arms but for an age, have, notwithstanding, commonly attained that greatness, in that age, which maintained them long after, when their profession and exercise of arms hath grown to decay.

Incident to this point is, for a state to have those laws or customs, which may reach forth unto them just occasions (as may be pretended) of war. For there is that justice, imprinted in the nature of men, that they enter not upon wars (whereof so many calamities do ensue) but upon some, at the least specious, grounds and quarrels. The Turk hath at hand, for cause of war, the propagation of his law or sect; a quarrel that he may always command. The Romans, though they esteemed the extending the limits of their empire, to be great honor to their generals, when it was done, yet they never rested upon that alone, to begin a war. First, therefore, let nations that pretend to greatness have this; that they be sensible of wrongs, either upon borderers, merchants, or politic ministers; and that they sit not too long upon a provocation. Secondly, let them be prest, and ready to give aids and succors, to their confederates; as it ever was with the Romans; insomuch, as if the confederate had leagues defensive, with divers other states, and, upon invasion offered, did implore their aids severally, yet the Romans would ever be the foremost, and leave it to none other to have the honor. As for the wars which were anciently made, on the behalf of a kind of party, or tacit conformity of estate, I do not see how they may be well justified: as when the Romans made a war, for the liberty of Grecia; or when the Lacedaemonians and Athenians, made wars to set up or pull down democracies and oligarchies; or when wars were made by foreigners, under the pretence of justice or protection, to deliver the subjects of others, from tyranny and

oppression; and the like. Let it suffice, that no estate expect to be great, that is not awake upon any just occasion of arming.

No body can be healthful without exercise, neither natural body nor politic; and certainly to a kingdom or estate, a just and honorable war, is the true exercise. A civil war, indeed, is like the heat of a fever; but a foreign war is like the heat of exercise, and serveth to keep the body in health; for in a slothful peace, both courages will effeminate, and manners corrupt. But howsoever it be for happiness, without all question, for greatness, it maketh to be still for the most part in arms; and the strength of a veteran army (though it be a chargeable business) always on foot, is that which commonly giveth the law, or at least the reputation, amongst all neighbor states; as may well be seen in Spain, which hath had, in one part or other, a veteran army almost continually, now by the space of six score years.

To be master of the sea, is an abridgment of a monarchy. Cicero, writing to Atticus of Pompey his preparation against Caesar, saith, Consilium Pompeii plane Themistocleum est; putat enim, qui mari potitur, eum rerum potiri. And, without doubt, Pompey had tired out Caesar, if upon vain confidence, he had not left that way. We see the great effects of battles by sea. The battle of Actium, decided the empire of the world. The battle of Lepanto, arrested the greatness of the Turk. There be many examples, where sea-fights have been final to the war; but this is when princes or states have set up their rest, upon the battles. But thus much is certain, that he that commands the sea, is at great liberty, and may take as much, and as little, of the war as he will. Whereas those that be strongest by land, are many times nevertheless in great straits. Surely, at this day, with us of Europe, the vantage of strength at sea (which is one of the principal dowries of this kingdom of Great Britain) is great; both because most of the kingdoms of Europe, are not merely inland, but girt with the sea most part of their compass; and because the wealth of both Indies seems in great part, but an accessory to the command of the seas.

The wars of latter ages seem to be made in the dark, in respect of the glory, and honor, which reflected upon men from the wars, in ancient time. There be

now, for martial encouragement, some degrees and orders of chivalry; which nevertheless are conferred promiscuously, upon soldiers and no soldiers; and some remembrance perhaps, upon the scutcheon; and some hospitals for maimed soldiers; and such like things. But in ancient times, the trophies erected upon the place of the victory; the funeral laudatives and monuments for those that died in the wars; the crowns and garlands personal; the style of emperor, which the great kings of the world after borrowed; the triumphs of the generals, upon their return; the great donatives and largesses, upon the disbanding of the armies; were things able to inflame all men's courages. But above all, that of the triumph, amongst the Romans, was not pageants or gaudery, but one of the wisest and noblest institutions, that ever was. For it contained three things: honor to the general; riches to the treasury out of the spoils; and donatives to the army. But that honor, perhaps were not fit for monarchies; except it be in the person of the monarch himself, or his sons; as it came to pass in the times of the Roman emperors, who did impropriate the actual triumphs to themselves, and their sons, for such wars as they did achieve in person; and left only, for wars achieved by subjects, some triumphal garments and ensigns to the general.

To conclude: no man can by care taking (as the Scripture saith) add a cubit to his stature, in this little model of a man's body; but in the great frame of kingdoms and commonwealths, it is in the power of princes or estates, to add amplitude and greatness to their kingdoms; for by introducing such ordinances, constitutions, and customs, as we have now touched, they may sow greatness to their posterity and succession. But these things are commonly not observed, but left to take their chance.

Of Regiment Of Health

THERE is a wisdom in this; beyond the rules of physic: a man's own observation, what he finds good of, and what he finds hurt of, is the best physic to preserve health. But it is a safer conclusion to say, This agreeth not well with me, therefore, I will not continue it; than this, I find no offence of this, therefore I may use it. For strength of nature in youth, passeth over many excesses, which are owing a man till his age. Discern of the coming on of years, and think not to do the same things still; for age will not be defied. Beware of sudden change, in any great point of diet, and, if necessity enforce it, fit the rest to it. For it is a secret both in nature and state, that it is safer to change many things, than one. Examine thy customs of diet, sleep, exercise, apparel, and the like; and try, in any thing thou shalt judge hurtful, to discontinue it, by little and little; but so, as if thou dost find any inconvenience by the change, thou come back to it again: for it is hard to distinguish that which is generally held good and wholesome, from that which is good particularly, and fit for thine own body. To be free-minded and cheerfully disposed, at hours of meat, and of sleep, and of exercise, is one of the best precepts of long lasting. As for the passions, and studies of the mind; avoid envy, anxious fears; anger fretting inwards; subtle and knotty inquisitions; joys and exhilarations in excess; sadness not communicated. Entertain hopes; mirth rather than joy; variety of delights, rather than surfeit of them; wonder and admiration, and therefore novelties; studies that fill the mind with splendid and illustrious objects, as histories, fables, and contemplations of nature. If you fly physic in health altogether, it will be too strange for your body, when you shall need it. If you make it too familiar, it will work no extraordinary effect, when sickness cometh. I commend rather some diet for certain seasons, than frequent use of physic, except it be grown into a custom. For those diets alter the body more, and trouble it less. Despise no new accident in your body, but ask opinion of it. In sickness, respect health principally; and in health, action. For those that put their bodies to endure in health, may in most sicknesses, which

are not very sharp, be cured only with diet, and tendering. Celsus could never have spoken it as a physician, had he not been a wise man withal, when he giveth it for one of the great precepts of health and lasting, that a man do vary, and interchange contraries, but with an inclination to the more benign extreme: use fasting and full eating, but rather full eating; watching and sleep, but rather sleep; sitting and exercise, but rather exercise; and the like. So shall nature be cherished, and yet taught masteries. Physicians are, some of them, so pleasing and conformable to the humor of the patient, as they press not the true cure of the disease; and some other are so regular, in proceeding according to art for the disease, as they respect not sufficiently the condition of the patient. Take one of a middle temper; or if it may not be found in one man, combine two of either sort; and forget not to call as well, the best acquainted with your body, as the best reputed of for his faculty.

Of Suspicion

SUSPICIONS amongst thoughts, are like bats amongst birds, they ever fly by twilight. Certainly they are to be repressed, or at least well guarded: for they cloud the mind; they leese friends; and they check with business, whereby business cannot go on currently and constantly. They dispose kings to tyranny, husbands to jealousy, wise men to irresolution and melancholy. They are defects, not in the heart, but in the brain; for they take place in the stoutest natures; as in the example of Henry the Seventh of England. There was not a more suspicious man, nor a more stout. And in such a composition they do small hurt. For commonly they are not admitted, but with examination, whether they be likely or no. But in fearful natures they gain ground too fast. There is nothing makes a man suspect much, more than to know little; and therefore men should remedy suspicion, by procuring to know more, and not to keep their suspicions in smother. What would men have? Do they think, those they employ and deal with, are saints? Do they not think, they will have their own ends, and be truer to themselves, than to them? Therefore there is no better way, to moderate suspicions, than to account upon such suspicions as true, and yet to bridle them as false. For so far a man ought to make use of suspicions, as to provide, as if that should be true, that he suspects, yet it may do him no hurt. Suspicions that the mind of itself gathers, are but buzzes; but suspicions that are artificially nourished, and put into men's heads, by the tales and whisperings of others, have stings. Certainly, the best mean, to clear the way in this same wood of suspicions, is frankly to communicate them with the party, that he suspects; for thereby he shall be sure to know more of the truth of them, than he did before; and withal shall make that party more circumspect, not to give further cause of suspicion. But this would not be done to men of base natures; for they, if they find themselves once suspected, will never be true. The Italian says, Sospetto licentia fede; as if suspicion, did give a passport to faith; but it ought, rather, to kindle it to discharge itself.

Of Discourse

SOME, in their discourse, desire rather commendation of wit, in being able to hold all arguments, than of judgment, in discerning what is true; as if it were a praise, to know what might be said, and not, what should be thought. Some have certain common places, and themes, wherein they are good and want variety; which kind of poverty is for the most part tedious, and when it is once perceived, ridiculous. The honorablest part of talk, is to give the occasion; and again to moderate, and pass to somewhat else; for then a man leads the dance. It is good, in discourse and speech of conversation, to vary and intermingle speech of the present occasion, with arguments, tales with reasons, asking of questions, with telling of opinions, and jest with earnest: for it is a dull thing to tire, and, as we say now, to jade, any thing too far. As for jest, there be certain things, which ought to be privileged from it; namely, religion, matters of state, great persons, any man's present business of importance, and any case that deserveth pity. Yet there be some, that think their wits have been asleep, except they dart out somewhat that is piquant, and to the quick. That is a vein which would be bridled:

Parce, puer, stimulis, et fortius utere loris.

And generally, men ought to find the difference, between saltness and bitterness. Certainly, he that hath a satirical vein, as he maketh others afraid of his wit, so he had need be afraid of others' memory. He that questioneth much, shall learn much, and content much; but especially, if he apply his questions to the skill of the persons whom he asketh; for he shall give them occasion, to please themselves in speaking, and himself shall continually gather knowledge. But let his questions not be troublesome; for that is fit for a poser. And let him be sure to leave other men, their turns to speak. Nay, if there be any, that would reign and take up all the time, let him find means to take them off, and to bring others on; as musicians use to do, with those that dance too long galliards. If you dissemble, sometimes, your knowledge of that you are thought to know, you

shall be thought, another time, to know that you know not. Speech of a man's self ought to be seldom, and well chosen. I knew one, was wont to say in scorn, He must needs be a wise man, he speaks so much of himself: and there is but one case, wherein a man may commend himself with good grace; and that is in commending virtue in another; especially if it be such a virtue, whereunto himself pretendeth. Speech of touch towards others, should be sparingly used; for discourse ought to be as a field, without coming home to any man. I knew two noblemen, of the west part of England, whereof the one was given to scoff, but kept ever royal cheer in his house; the other would ask, of those that had been at the other's table, Tell truly, was there never a flout or dry blow given? To which the guest would answer, Such and such a thing passed. The lord would say, I thought, he would mar a good dinner. Discretion of speech, is more than eloquence; and to speak agreeably to him, with whom we deal, is more than to speak in good words, or in good order. A good continued speech, without a good speech of interlocution, shows slowness: and a good reply or second speech, without a good settled speech, showeth shallowness and weakness. As we see in beasts, that those that are weakest in the course, are yet nimblest in the turn; as it is betwixt the greyhound and the hare. To use too many circumstances, ere one come to the matter, is wearisome; to use none at all, is blunt.

Of Plantations

PLANTATIONS are amongst ancient, primitive, and heroical works. When the world was young, it begat more children; but now it is old, it begets fewer: for I may justly account new plantations, to be the children of former kingdoms. I like a plantation in a pure soil; that is, where people are not displanted, to the end, to plant in others. For else it is rather an extirpation, than a plantation. Planting of countries, is like planting of woods; for you must make account to leese almost twenty years' profit, and expect your recompense in the end. For the principal thing, that hath been the destruction of most plantations, hath been the base and hasty drawing of profit, in the first years. It is true, speedy profit is not to be neglected, as far as may stand with the good of the plantation, but no further. It is a shameful and unblessed thing, to take the scum of people, and wicked condemned men, to be the people with whom you plant; and not only so, but it spoileth the plantation; for they will ever live like rogues, and not fall to work, but be lazy, and do mischief, and spend victuals, and be quickly weary, and then certify over to their country, to the discredit of the plantation. The people wherewith you plant ought to be gardeners, ploughmen, laborers, smiths, carpenters, joiners, fishermen, fowlers, with some few apothecaries, surgeons, cooks, and bakers. In a country of plantation, first look about, what kind of victual the country yields of itself to hand; as chestnuts, walnuts, pineapples, olives, dates, plums, cherries, wild honey, and the like; and make use of them. Then consider what victual or esculent things there are, which grow speedily, and within the year; as parsnips, carrots, turnips, onions, radish, artichokes of Hierusalem, maize, and the like. For wheat, barley, and oats, they ask too much labor; but with pease and beans you may begin, both because they ask less labor, and because they serve for meat, as well as for bread. And of rice, likewise cometh a great increase, and it is a kind of meat. Above all, there ought to be brought store of biscuit, oat-meal, flour, meal, and the like, in the beginning, till bread may be had. For beasts, or birds, take chiefly such as are least subject to

diseases, and multiply fastest; as swine, goats, cocks, hens, turkeys, geese, house-doves, and the like. The victual in plantations, ought to be expended almost as in a besieged town; that is, with certain allowance. And let the main part of the ground, employed to gardens or corn, be to a common stock; and to be laid in, and stored up, and then delivered out in proportion; besides some spots of ground, that any particular person will manure for his own private. Consider likewise what commodities, the soil where the plantation is, doth naturally yield, that they may some way help to defray the charge of the plantation (so it be not, as was said, to the untimely prejudice of the main business), as it hath fared with tobacco in Virginia. Wood commonly aboundeth but too much; and therefore timber is fit to be one. If there be iron ore, and streams whereupon to set the mills, iron is a brave commodity where wood aboundeth. Making of bay-salt, if the climate be proper for it, would be put in experience. Growing silk likewise, if any be, is a likely commodity. Pitch and tar, where store of firs and pines are, will not fail. So drugs and sweet woods, where they are, cannot but yield great profit. Soap-ashes likewise, and other things that may be thought of. But moil not too much under ground; for the hope of mines is very uncertain, and useth to make the planters lazy, in other things. For government; let it be in the hands of one, assisted with some counsel; and let them have commission to exercise martial laws, with some limitation. And above all, let men make that profit, of being in the wilderness, as they have God always, and his service, before their eyes. Let not the government of the plantation, depend upon too many counsellors, and undertakers, in the country that planteth, but upon a temperate number; and let those be rather noblemen and gentlemen, than merchants; for they look ever to the present gain. Let there be freedom from custom, till the plantation be of strength; and not only freedom from custom, but freedom to carry their commodities, where they may make their best of them, except there be some special cause of caution. Cram not in people, by sending too fast company after company; but rather harken how they waste, and send supplies proportionably; but so, as the number may live well in the plantation, and not by surcharge be in penury. It hath been a great

endangering to the health of some plantations, that they have built along the sea and rivers, in marish and unwholesome grounds. Therefore, though you begin there, to avoid carriage and like discommodities, yet build still rather upwards from the streams, than along. It concerneth likewise the health of the plantation, that they have good store of salt with them, that they may use it in their victuals, when it shall be necessary. If you plant where savages are, do not only entertain them, with trifles and gingles, but use them justly and graciously, with sufficient guard nevertheless; and do not win their favor, by helping them to invade their enemies, but for their defence it is not amiss; and send oft of them, over to the country that plants, that they may see a better condition than their own, and commend it when they return. When the plantation grows to strength, then it is time to plant with women, as well as with men; that the plantation may spread into generations, and not be ever pieced from without. It is the sinfullest thing in the world, to forsake or destitute a plantation once in forwardness; for besides the dishonor, it is the guiltiness of blood of many commiserable persons.

Of Riches

I CANNOT call riches better than the baggage of virtue. The Roman word is better, impedimenta. For as the baggage is to an army, so is riches to virtue. It cannot be spared, nor left behind, but it hindereth the march; yea, and the care of it, sometimes loseth or disturbeth the victory. Of great riches there is no real use, except it be in the distribution; the rest is but conceit. So saith Solomon, Where much is, there are many to consume it; and what hath the owner, but the sight of it with his eyes? The personal fruition in any man, cannot reach to feel great riches: there is a custody of them; or a power of dole, and donative of them; or a fame of them; but no solid use to the owner. Do you not see what feigned prices, are set upon little stones and rarities? and what works of ostentation are undertaken, because there might seem to be some use of great riches? But then you will say, they may be of use, to buy men out of dangers or troubles. As Solomon saith, Riches are as a strong hold, in the imagination of the rich man. But this is excellently expressed, that it is in imagination, and not always in fact. For certainly great riches, have sold more men, than they have bought out. Seek not proud riches, but such as thou mayest get justly, use soberly, distribute cheerfully, and leave contentedly. Yet have no abstract nor friarly contempt of them. But distinguish, as Cicero saith well of Rabirius Posthumus, In studio rei amplificandae apparebat, non avaritiae praedam, sed instrumentum bonitati quaeri. Harken also to Solomon, and beware of hasty gathering of riches; Qui festinat ad divitias, non erit insons. The poets feign, that when Plutus (which is Riches) is sent from Jupiter, he limps and goes slowly; but when he is sent from Pluto, he runs, and is swift of foot. Meaning that riches gotten by good means, and just labor, pace slowly; but when they come by the death of others (as by the course of inheritance, testaments, and the like), they come tumbling upon a man. But it mought be applied likewise to Pluto, taking him for the devil. For when riches come from the devil (as by fraud and oppression, and unjust means), they come upon speed. The ways to enrich are many, and most of them foul.

Parsimony is one of the best, and yet is not innocent; for it withholdeth men from works of liberality and charity. The improvement of the ground, is the most natural obtaining of riches; for it is our great mother's blessing, the earth's; but it is slow. And yet where men of great wealth do stoop to husbandry, it multiplieth riches exceedingly. I knew a nobleman in England, that had the greatest audits of any man in my time; a great grazier, a great sheep-master, a great timber man, a great collier, a great corn-master, a great lead-man, and so of iron, and a number of the like points of husbandry. So as the earth seemed a sea to him, in respect of the perpetual importation. It was truly observed by one, that himself came very hardly, to a little riches, and very easily, to great riches. For when a man's stock is come to that, that he can expect the prime of markets, and overcome those bargains, which for their greatness are few men's money, and be partner in the industries of younger men, he cannot but increase mainly. The gains of ordinary trades and vocations are honest; and furthered by two things chiefly: by diligence, and by a good name, for good and fair dealing. But the gains of bargains, are of a more doubtful nature; when men shall wait upon others' necessity, broke by servants and instruments to draw them on, put off others cunningly, that would be better chapmen, and the like practices, which are crafty and naught. As for the chopping of bargains, when a man buys not to hold but to sell over again, that commonly grindeth double, both upon the seller, and upon the buyer. Sharings do greatly enrich, if the hands be well chosen, that are trusted. Usury is the certainest means of gain, though one of the worst; as that whereby a man doth eat his bread, in sudore vultus alieni; and besides, doth plough upon Sundays. But yet certain though it be, it hath flaws; for that the scriveners and brokers do value unsound men, to serve their own turn. The fortune in being the first, in an invention or in a privilege, doth cause sometimes a wonderful overgrowth in riches; as it was with the first sugar man, in the Canaries. Therefore if a man can play the true logician, to have as well judgment, as invention, he may do great matters; especially if the times be fit. He that resteth upon gains certain, shall hardly grow to great riches; and he that puts all upon adventures, doth oftentimes break and come to poverty: it is good,

therefore, to guard adventures with certainties, that may uphold losses. Monopolies, and coemption of wares for re-sale, where they are not restrained, are great means to enrich; especially if the party have intelligence, what things are like to come into request, and so store himself beforehand. Riches gotten by service, though it be of the best rise, yet when they are gotten by flattery, feeding humors, and other servile conditions, they may be placed amongst the worst. As for fishing for testaments and executorships (as Tacitus saith of Seneca, testamenta et orbos tamquam indagine capi), it is yet worse; by how much men submit themselves to meaner persons, than in service. Believe not much, them that seem to despise riches; for they despise them, that despair of them; and none worse, when they come to them. Be not penny-wise; riches have wings, and sometimes they fly away of themselves, sometimes they must be set flying, to bring in more. Men leave their riches, either to their kindred, or to the public; and moderate portions, prosper best in both. A great state left to an heir, is as a lure to all the birds of prey round about, to seize on him, if he be not the better stablished in years and judgment. Likewise glorious gifts and foundations, are like sacrifices without salt; and but the painted sepulchres of alms, which soon will putrefy, and corrupt inwardly. Therefore measure not thine advancements, by quantity, but frame them by measure: and defer not charities till death; for, certainly, if a man weigh it rightly, he that doth so, is rather liberal of another man’s, than of his own.

Of Prophecies

I MEAN not to speak of divine prophecies; nor of heathen oracles; nor of natural predictions; but only of prophecies that have been of certain memory, and from hidden causes. Saith the Pythonissa to Saul, To-morrow thou and thy son shall be with me. Homer hath these verses: At domus AEneae cunctis dominabitur oris, Et nati natorum, et qui nascentur ab illis.

A prophecy, as it seems, of the Roman empire. Seneca the tragedian hath these verses: — Venient annis

Saecula seris, quibus Oceanus Vincula rerum laxet, et ingens Pateat Tellus, Tiphysque novos Detegat orbes; nec sit terris Ultima Thule:

a prophecy of the discovery of America. The daughter of Polycrates, dreamed that Jupiter bathed her father, and Apollo anointed him; and it came to pass, that he was crucified in an open place, where the sun made his body run with sweat, and the rain washed it. Philip of Macedon dreamed, he sealed up his wife's belly; whereby he did expound it, that his wife should be barren; but Aristander the soothsayer, told him his wife was with child, because men do not use to seal vessels, that are empty. A phantasm that appeared to M. Brutus, in his tent, said to him, Philippis iterum me videbis. Tiberius said to Galba, Tu quoque, Galba, degustabis imperium. In Vespasian's time, there went a prophecy in the East, that those that should come forth of Judea, should reign over the world: which though it may be was meant of our Savior; yet Tacitus expounds it of Vespasian. Domitian dreamed, the night before he was slain, that a golden head was growing, out of the nape of his neck: and indeed, the succession that followed him for many years, made golden times. Henry the Sixth of England, said of Henry the Seventh, when he was a lad, and gave him water, This is the lad that shall enjoy the crown, for which we strive. When I was in France, I heard from one Dr. Pena, that the Queen Mother, who was given to curious arts, caused the King her husband's nativity to be calculated, under a false name; and the astrologer gave a judgment, that he should be killed in a duel; at which the

Queen laughed, thinking her husband to be above challenges and duels: but he was slain upon a course at tilt, the splinters of the staff of Montgomery going in at his beaver. The trivial prophecy, which I heard when I was a child, and Queen Elizabeth was in the flower of her years, was, When hempe is spun

England's done:

whereby it was generally conceived, that after the princes had reigned, which had the principal letters of that word hempe (which were Henry, Edward, Mary, Philip, and Elizabeth), England should come to utter confusion; which, thanks be to God, is verified only in the change of the name; for that the King's style, is now no more of England but of Britain. There was also another prophecy, before the year of '88, which I do not well understand.

There shall be seen upon a day, Between the Baugh and the May, The black fleet of Norway.

When that that is come and gone, England build houses of lime and stone, For after wars shall you have none.

It was generally conceived to be meant, of the Spanish fleet that came in '88: for that the king of Spain's surname, as they say, is Norway. The prediction of Regiomontanus, Octogesimus octavus mirabilis annus, was thought likewise accomplished in the sending of that great fleet, being the greatest in strength, though not in number, of all that ever swam upon the sea. As for Cleon's dream, I think it was a jest. It was, that he was devoured of a long dragon; and it was expounded of a maker of sausages, that troubled him exceedingly. There are numbers of the like kind; especially if you include dreams, and predictions of astrology. But I have set down these few only, of certain credit, for example. My judgment is, that they ought all to be despised; and ought to serve but for winter talk by the fireside. Though when I say despised, I mean it as for belief; for otherwise, the spreading, or publishing, of them, is in no sort to be despised. For they have done much mischief; and I see many severe laws made, to suppress them. That that hath given them grace, and some credit, consisteth in three things. First, that men mark when they hit, and never mark when they miss; as

they do generally also of dreams. The second is, that probable conjectures, or obscure traditions, many times turn themselves into prophecies; while the nature of man, which coveteth divination, thinks it no peril to foretell that which indeed they do but collect. As that of Seneca's verse. For so much was then subject to demonstration, that the globe of the earth had great parts beyond the Atlantic, which mought be probably conceived not to be all sea: and adding thereto the tradition in Plato's Timaeus, and his Atlanticus, it mought encourage one to turn it to a prediction. The third and last (which is the great one) is, that almost all of them, being infinite in number, have been impostures, and by idle and crafty brains merely contrived and feigned, after the event past.

Of Ambition

AMBITION is like choler; which is an humor that maketh men active, earnest, full of alacrity, and stirring, if it be not stopped. But if it be stopped, and cannot have his way, it becometh adust, and thereby malign and venomous. So ambitious men, if they find the way open for their rising, and still get forward, they are rather busy than dangerous; but if they be checked in their desires, they become secretly discontent, and look upon men and matters with an evil eye, and are best pleased, when things go backward; which is the worst property in a servant of a prince, or state. Therefore it is good for princes, if they use ambitious men, to handle it, so as they be still progressive and not retrograde; which, because it cannot be without inconvenience, it is good not to use such natures at all. For if they rise not with their service, they will take order, to make their service fall with them. But since we have said, it were good not to use men of ambitious natures, except it be upon necessity, it is fit we speak, in what cases they are of necessity. Good commanders in the wars must be taken, be they never so ambitious; for the use of their service, dispenseth with the rest; and to take a soldier without ambition, is to pull off his spurs. There is also great use of ambitious men, in being screens to princes in matters of danger and envy; for no man will take that part, except he be like a seeled dove, that mounts and mounts, because he cannot see about him. There is use also of ambitious men, in pulling down the greatness of any subject that overtops; as Tiberius used Marco, in the pulling down of Sejanus. Since, therefore, they must be used in such cases, there resteth to speak, how they are to be bridled, that they may be less dangerous. There is less danger of them, if they be of mean birth, than if they be noble; and if they be rather harsh of nature, than gracious and popular: and if they be rather new raised, than grown cunning, and fortified, in their greatness. It is counted by some, a weakness in princes, to have favorites; but it is, of all others, the best remedy against ambitious great-ones. For when the way of pleasuring, and displeasuring, lieth by the favorite, it is impossible any other should be

overgreat. Another means to curb them, is to balance them by others, as proud as they. But then there must be some middle counsellors, to keep things steady; for without that ballast, the ship will roll too much. At the least, a prince may animate and inure some meaner persons, to be as it were scourges, to ambitious men. As for the having of them obnoxious to ruin; if they be of fearful natures, it may do well; but if they be stout and daring, it may precipitate their designs, and prove dangerous. As for the pulling of them down, if the affairs require it, and that it may not be done with safety suddenly, the only way is the interchange, continually, of favors and disgraces; whereby they may not know what to expect, and be, as it were, in a wood. Of ambitions, it is less harmful, the ambition to prevail in great things, than that other, to appear in every thing; for that breeds confusion, and mars business. But yet it is less danger, to have an ambitious man stirring in business, than great in dependences. He that seeketh to be eminent amongst able men, hath a great task; but that is ever good for the public. But he, that plots to be the only figure amongst ciphers, is the decay of a whole age. Honor hath three things in it: the vantage ground to do good; the approach to kings and principal persons; and the raising of a man's own fortunes. He that hath the best of these intentions, when he aspireth, is an honest man; and that prince, that can discern of these intentions in another that aspireth, is a wise prince. Generally, let princes and states choose such ministers, as are more sensible of duty than of using; and such as love business rather upon conscience, than upon bravery, and let them discern a busy nature, from a willing mind.

Of Masques And Triumphs

THESE things are but toys, to come amongst such serious observations. But yet, since princes will have such things, it is better they should be graced with elegancy, than daubed with cost. Dancing to song, is a thing of great state and pleasure. I understand it, that the song be in quire, placed aloft, and accompanied with some broken music; and the ditty fitted to the device. Acting in song, especially in dialogues, hath an extreme good grace; I say acting, not dancing (for that is a mean and vulgar thing); and the voices of the dialogue would be strong and manly (a base and a tenor; no treble); and the ditty high and tragical; not nice or dainty. Several quires, placed one over against another, and taking the voice by catches, anthem-wise, give great pleasure. Turning dances into figure, is a childish curiosity. And generally let it be noted, that those things which I here set down, are such as do naturally take the sense, and not respect petty wonderments. It is true, the alterations of scenes, so it be quietly and without noise, are things of great beauty and pleasure; for they feed and relieve the eye, before it be full of the same object. Let the scenes abound with light, specially colored and varied; and let the masquers, or any other, that are to come down from the scene, have some motions upon the scene itself, before their coming down; for it draws the eye strangely, and makes it, with great pleasure, to desire to see, that it cannot perfectly discern. Let the songs be loud and cheerful, and not chirpings or pulings. Let the music likewise be sharp and loud, and well placed. The colors that show best by candle-light are white, carnation, and a kind of sea-water-green; and oes, or spangs, as they are of no great cost, so they are of most glory. As for rich embroidery, it is lost and not discerned. Let the suits of the masquers be graceful, and such as become the person, when the vizors are off; not after examples of known attires; Turke, soldiers, mariners', and the like. Let anti-masques not be long; they have been commonly of fools, satyrs, baboons, wild-men, antics, beasts, sprites, witches, Ethiops, pigmies, turquets, nymphs, rustics, Cupids, statuas moving, and the like. As for angels, it

is not comical enough, to put them in anti-masques; and anything that is hideous, as devils, giants, is on the other side as unfit. But chiefly, let the music of them be recreative, and with some strange changes. Some sweet odors suddenly coming forth, without any drops falling, are, in such a company as there is steam and heat, things of great pleasure and refreshment. Double masques, one of men, another of ladies, addeth state and variety. But all is nothing except the room be kept clear and neat.

For justs, and tourneys, and barriers; the glories of them are chiefly in the chariots, wherein the challengers make their entry; especially if they be drawn with strange beasts: as lions, bears, camels, and the like; or in the devices of their entrance; or in the bravery of their liveries; or in the goodly furniture of their horses and armor. But enough of these toys.

Of Nature In Men

NATURE is often hidden; sometimes overcome; seldom extinguished. Force, maketh nature more violent in the return; doctrine and discourse, maketh nature less importune; but custom only doth alter and subdue nature. He that seeketh victory over his nature, let him not set himself too great, nor too small tasks; for the first will make him dejected by often failings; and the second will make him a small proceeder, though by often prevailings. And at the first let him practise with helps, as swimmers do with bladders or rushes; but after a time let him practise with disadvantages, as dancers do with thick shoes. For it breeds great perfection, if the practice be harder than the use. Where nature is mighty, and therefore the victory hard, the degrees had need be, first to stay and arrest nature in time; like to him that would say over the four and twenty letters when he was angry; then to go less in quantity; as if one should, in forbearing wine, come from drinking healths, to a draught at a meal; and lastly, to discontinue altogether. But if a man have the fortitude, and resolution, to enfranchise himself at once, that is the best: Optimus ille animi vindex laedentia pectus Vincula qui rupit, dedoluitque semel.

Neither is the ancient rule amiss, to bend nature, as a wand, to a contrary extreme, whereby to set it right, understanding it, where the contrary extreme is no vice. Let not a man force a habit upon himself, with a perpetual continuance, but with some intermission. For both the pause reinforceth the new onset; and if a man that is not perfect, be ever in practice, he shall as well practise his errors, as his abilities, and induce one habit of both; and there is no means to help this, but by seasonable intermissions. But let not a man trust his victory over his nature, too far; for nature will lay buried a great time, and yet revive, upon the occasion or temptation. Like as it was with AEsop’s damsel, turned from a cat to a woman, who sat very demurely at the board’s end, till a mouse ran before her. Therefore, let a man either avoid the occasion altogether; or put himself often to it, that he may be little moved with it. A man’s nature is best perceived in

privateness, for there is no affectation; in passion, for that putteth a man out of his precepts; and in a new case or experiment, for there custom leaveth him. They are happy men, whose natures sort with their vocations; otherwise they may say, multum incola fuit anima mea; when they converse in those things, they do not affect. In studies, whatsoever a man commandeth upon himself, let him set hours for it; but whatsoever is agreeable to his nature, let him take no care for any set times; for his thoughts will fly to it, of themselves; so as the spaces of other business, or studies, will suffice. A man’s nature, runs either to herbs or weeds; therefore let him seasonably water the one, and destroy the other.

Of Custom And Education

MEN'S thoughts, are much according to their inclination; their discourse and speeches, according to their learning and infused opinions; but their deeds, are after as they have been accustomed. And therefore, as Machiavel well noteth (though in an evil-favored instance), there is no trusting to the force of nature, nor to the bravery of words, except it be corroborate by custom. His instance is, that for the achieving of a desperate conspiracy, a man should not rest upon the fierceness of any man's nature, or his resolute undertakings; but take such an one, as hath had his hands formerly in blood. But Machiavel knew not of a Friar Clement, nor a Ravillac, nor a Jaureguy, nor a Baltazar Gerard; yet his rule holdeth still, that nature, nor the engagement of words, are not so forcible, as custom. Only superstition is now so well advanced, that men of the first blood, are as firm as butchers by occupation; and votary resolution, is made equipollent to custom, even in matter of blood. In other things, the predominancy of custom is everywhere visible; insomuch as a man would wonder, to hear men profess, protest, engage, give great words, and then do, just as they have done before; as if they were dead images, and engines moved only by the wheels of custom. We see also the reign or tyranny of custom, what it is. The Indians (I mean the sect of their wise men) lay themselves quietly upon a stock of wood, and so sacrifice themselves by fire. Nay, the wives strive to be burned, with the corpses of their husbands. The lads of Sparta, of ancient time, were wont to be scourged upon the altar of Diana, without so much as quecking. I remember, in the beginning of Queen Elizabeth's time of England, an Irish rebel condemned, put up a petition to the deputy, that he might be hanged in a withe, and not in an halter; because it had been so used, with former rebels. There be monks in Russia, for penance, that will sit a whole night in a vessel of water, till they be engaged with hard ice. Many examples may be put of the force of custom, both upon mind and body. Therefore, since custom is the principal magistrate of man's life, let men by all means endeavor, to obtain good customs. Certainly custom is most perfect, when

it beginneth in young years: this we call education; which is, in effect, but an early custom. So we see, in languages, the tongue is more pliant to all expressions and sounds, the joints are more supple, to all feats of activity and motions, in youth than afterwards. For it is true, that late learners cannot so well take the ply; except it be in some minds, that have not suffered themselves to fix, but have kept themselves open, and prepared to receive continual amendment, which is exceeding rare. But if the force of custom simple and separate, be great, the force of custom copulate and conjoined and collegiate, is far greater. For there example teacheth, company comforteth, emulation quickeneth, glory raiseth: so as in such places the force of custom is in his exaltation. Certainly the great multiplication of virtues upon human nature, resteth upon societies well ordained and disciplined. For commonwealths, and good governments, do nourish virtue grown but do not much mend the deeds. But the misery is, that the most effectual means, are now applied to the ends, least to be desired.

Of Fortune

IT CANNOT be denied, but outward accidents conduce much to fortune; favor, opportunity, death of others, occasion fitting virtue. But chiefly, the mould of a man's fortune is in his own hands. Faber quisque fortunae suae, saith the poet. And the most frequent of external causes is, that the folly of one man, is the fortune of another. For no man prospers so suddenly, as by others' errors. Serpens nisi serpentem comederit non fit draco. Overt and apparent virtues, bring forth praise; but there be secret and hidden virtues, that bring forth fortune; certain deliveries of a man's self, which have no name. The Spanish name, desemboltura, partly expresseth them; when there be not stonds nor restiveness in a man's nature; but that the wheels of his mind, keep way with the wheels of his fortune. For so Livy (after he had described Cato Major in these words, In illo viro tantum robur corporis et animi fuit, ut quocunque loco natus esset, fortunam sibi facturus videretur) falleth upon that, that he had versatile ingenium. Therefore if a man look sharply and attentively, he shall see Fortune: for though she be blind, yet she is not invisible. The way of fortune, is like the Milken Way in the sky; which is a meeting or knot of a number of small stars; not seen asunder, but giving light together. So are there a number of little, and scarce discerned virtues, or rather faculties and customs, that make men fortunate. The Italians note some of them, such as a man would little think. When they speak of one that cannot do amiss, they will throw in, into his other conditions, that he hath Poco di matto. And certainly there be not two more fortunate properties, than to have a little of the fool, and not too much of the honest. Therefore extreme lovers of their country or masters, were never fortunate, neither can they be. For when a man placeth his thoughts without himself, he goeth not his own way. An hasty fortune maketh an enterpriser and remover (the French hath it better, entreprenant, or remuant); but the exercised fortune maketh the able man. Fortune is to be honored and respected, and it be but for her daughters, Confidence and Reputation. For those two, Felicity

breedeth; the first within a man's self, the latter in others towards him. All wise men, to decline the envy of their own virtues, use to ascribe them to Providence and Fortune; for so they may the better assume them: and, besides, it is greatness in a man, to be the care of the higher powers. So Caesar said to the pilot in the tempest, Caesarem portas, et fortunam ejus. So Sylla chose the name of Felix, and not of Magnus. And it hath been noted, that those who ascribe openly too much to their own wisdom and policy, end infortunate. It is written that Timotheus the Athenian, after he had, in the account he gave to the state of his government, often interlaced this speech, and in this, Fortune had no part, never prospered in anything, he undertook afterwards. Certainly there be, whose fortunes are like Homer's verses, that have a slide and easiness more than the verses of other poets; as Plutarch saith of Timoleon's fortune, in respect of that of Agesilaus or Epaminondas. And that this should be, no doubt it is much, in a man's self.

Of Usury

MANY have made witty invectives against usury. They say that it is a pity, the devil should have God's part, which is the tithe. That the usurer is the greatest Sabbath-breaker, because his plough goeth every Sunday. That the usurer is the drone, that Virgil speaketh of;

Ignavum fucos pecus a praesepibus arcent.

That the usurer breaketh the first law, that was made for mankind after the fall, which was, in sudore vultus tui comedes panem tuum; not, in sudore vultus alieni. That usurers should have orange-tawny bonnets, because they do judaize. That it is against nature for money to beget money; and the like. I say this only, that usury is a concessum propter duritiem cordis; for since there must be borrowing and lending, and men are so hard of heart, as they will not lend freely, usury must be permitted. Some others, have made suspicious and cunning propositions of banks, discovery of men's estates, and other inventions. But few have spoken of usury usefully. It is good to set before us, the incommodities and commodities of usury, that the good, may be either weighed out or culled out; and warily to provide, that while we make forth to that which is better, we meet not with that which is worse.

The discommodities of usury are, First, that it makes fewer merchants. For were it not for this lazy trade of usury, money would not be still, but would in great part be employed upon merchandizing; which is the vena porta of wealth in a state. The second, that it makes poor merchants. For, as a farmer cannot husband his ground so well, if he sit at a great rent; so the merchant cannot drive his trade so well, if he sit at great usury. The third is incident to the other two; and that is the decay of customs of kings or states, which ebb or flow, with merchandizing. The fourth, that it bringeth the treasure of a realm, or state, into a few hands. For the usurer being at certainties, and others at uncertainties, at the end of the game, most of the money will be in the box; and ever a state flourisheth, when wealth is more equally spread. The fifth, that it beats down the

price of land; for the employment of money, is chiefly either merchandizing or purchasing; and usury waylays both. The sixth, that it doth dull and damp all industries, improvements, and new inventions, wherein money would be stirring, if it were not for this slug. The last, that it is the canker and ruin of many men's estates; which, in process of time, breeds a public poverty.

On the other side, the commodities of usury are, first, that howsoever usury in some respect hindereth merchandizing, yet in some other it advanceth it; for it is certain that the greatest part of trade is driven by young merchants, upon borrowing at interest; so as if the usurer either call in, or keep back, his money, there will ensue, presently, a great stand of trade. The second is, that were it not for this easy borrowing upon interest, men's necessities would draw upon them a most sudden undoing; in that they would be forced to sell their means (be it lands or goods) far under foot; and so, whereas usury doth but gnaw upon them, bad markets would swallow them quite up. As for mortgaging or pawning, it will little mend the matter: for either men will not take pawns without use; or if they do, they will look precisely for the forfeiture. I remember a cruel moneyed man in the country, that would say, The devil take this usury, it keeps us from forfeitures, of mortgages and bonds. The third and last is, that it is a vanity to conceive, that there would be ordinary borrowing without profit; and it is impossible to conceive, the number of inconveniences that will ensue, if borrowing be cramped. Therefore to speak of the abolishing of usury is idle. All states have ever had it, in one kind or rate, or other. So as that opinion must be sent to Utopia.

To speak now of the reformation, and reiglement, of usury; how the discommodities of it may be best avoided, and the commodities retained. It appears, by the balance of commodities and discommodities of usury, two things are to be reconciled. The one, that the tooth of usury be grinded, that it bite not too much; the other, that there be left open a means, to invite moneyed men to lend to the merchants, for the continuing and quickening of trade. This cannot be done, except you introduce two several sorts of usury, a less and a greater. For if you reduce usury to one low rate, it will ease the common borrower, but the

merchant will be to seek for money. And it is to be noted, that the trade of merchandize, being the most lucrative, may bear usury at a good rate; other contracts not so.

To serve both intentions, the way would be briefly thus. That there be two rates of usury: the one free, and general for all; the other under license only, to certain persons, and in certain places of merchandizing. First, therefore, let usury in general, be reduced to five in the hundred; and let that rate be proclaimed, to be free and current; and let the state shut itself out, to take any penalty for the same. This will preserve borrowing, from any general stop or dryness. This will ease infinite borrowers in the country. This will, in good part, raise the price of land, because land purchased at sixteen years' purchase will yield six in the hundred, and somewhat more; whereas this rate of interest, yields but five. This by like reason will encourage, and edge, industrious and profitable improvements; because many will rather venture in that kind, than take five in the hundred, especially having been used to greater profit. Secondly, let there be certain persons licensed, to lend to known merchants, upon usury at a higher rate; and let it be with the cautions following. Let the rate be, even with the merchant himself, somewhat more easy than that he used formerly to pay; for by that means, all borrowers, shall have some ease by this reformation, be he merchant, or whosoever. Let it be no bank or common stock, but every man be master of his own money. Not that I altogether mislike banks, but they will hardly be brooked, in regard of certain suspicions. Let the state be answered some small matter for the license, and the rest left to the lender; for if the abatement be but small, it will no whit discourage the lender. For he, for example, that took before ten or nine in the hundred, will sooner descend to eight in the hundred than give over his trade of usury, and go from certain gains, to gains of hazard. Let these licensed lenders be in number indefinite, but restrained to certain principal cities and towns of merchandizing; for then they will be hardly able to color other men's moneys in the country: so as the license of nine will not suck away the current rate of five; for no man will send his moneys far off, nor put them into unknown hands.

If it be objected that this doth in a sort authorize usury, which before, was in some places but permissive; the answer is, that it is better to mitigate usury, by declaration, than to suffer it to rage, by connivance.

Of Youth And Age

A MAN that is young in years, may be old in hours, if he have lost no time. But that happeneth rarely. Generally, youth is like the first cogitations, not so wise as the second. For there is a youth in thoughts, as well as in ages. And yet the invention of young men, is more lively than that of old; and imaginations stream into their minds better, and, as it were, more divinely. Natures that have much heat, and great and violent desires and perturbations, are not ripe for action, till they have passed the meridian of their years; as it was with Julius Caesar and Septimius Severus. Of the latter, of whom it is said, Juventutem egit erroribus, imo furoribus, plenam. And yet he was the ablest emperor, almost, of all the list. But reposed natures may do well in youth. As it is seen in Augustus Caesar, Cosmus Duke of Florence, Gaston de Foix, and others. On the other side, heat and vivacity in age, is an excellent composition for business. Young men are fitter to invent, than to judge; fitter for execution, than for counsel; and fitter for new projects, than for settled business. For the experience of age, in things that fall within the compass of it, directeth them; but in new things, abuseth them.

The errors of young men, are the ruin of business; but the errors of aged men, amount but to this, that more might have been done, or sooner. Young men, in the conduct and manage of actions, embrace more than they can hold; stir more than they can quiet; fly to the end, without consideration of the means and degrees; pursue some few principles, which they have chanced upon absurdly; care not to innovate, which draws unknown inconveniences; use extreme remedies at first; and, that which doubleth all errors, will not acknowledge or retract them; like an unready horse, that will neither stop nor turn. Men of age object too much, consult too long, adventure too little, repent too soon, and seldom drive business home to the full period, but content themselves with a mediocrity of success. Certainly it is good to compound employments of both; for that will be good for the present, because the virtues of either age, may correct the defects of both; and good for succession, that young men may be

learners, while men in age are actors; and, lastly, good for extern accidents, because authority followeth old men, and favor and popularity, youth. But for the moral part, perhaps youth will have the pre-eminence, as age hath for the politic. A certain rabbin, upon the text, Your young men shall see visions, and your old men shall dream dreams, inferreth that young men, are admitted nearer to God than old, because vision, is a clearer revelation, than a dream. And certainly, the more a man drinketh of the world, the more it intoxicateth; and age doth profit rather in the powers of understanding, than in the virtues of the will and affections. There be some, have an over-early ripeness in their years, which fadeth betimes. These are, first, such as have brittle wits, the edge whereof is soon turned; such as was Hermogenes the rhetorician, whose books are exceeding subtle; who afterwards waxed stupid. A second sort, is of those that have some natural dispositions which have better grace in youth, than in age; such as is a fluent and luxuriant speech; which becomes youth well, but not age: so Tully saith of Hortensius, Idem manebat, neque idem decebat. The third is of such, as take too high a strain at the first, and are magnanimous, more than tract of years can uphold. As was Scipio Africanus, of whom Livy saith in effect, Ultima primis cedebant.

Of Beauty

VIRTUE is like a rich stone, best plain set; and surely virtue is best, in a body that is comely, though not of delicate features; and that hath rather dignity of presence, than beauty of aspect. Neither is it almost seen, that very beautiful persons are otherwise of great virtue; as if nature were rather busy, not to err, than in labor to produce excellency. And therefore they prove accomplished, but not of great spirit; and study rather behavior, than virtue. But this holds not always: for Augustus Caesar, Titus Vespasianus, Philip le Belle of France, Edward the Fourth of England, Alcibiades of Athens, Ismael the Sophy of Persia, were all high and great spirits; and yet the most beautiful men of their times. In beauty, that of favor, is more than that of color; and that of decent and gracious motion, more than that of favor. That is the best part of beauty, which a picture cannot express; no, nor the first sight of the life. There is no excellent beauty, that hath not some strangeness in the proportion. A man cannot tell whether Apelles, or Albert Durer, were the more trifler; whereof the one, would make a personage by geometrical proportions; the other, by taking the best parts out of divers faces, to make one excellent. Such personages, I think, would please nobody, but the painter that made them. Not but I think a painter may make a better face than ever was; but he must do it by a kind of felicity (as a musician that maketh an excellent air in music), and not by rule. A man shall see faces, that if you examine them part by part, you shall find never a good; and yet altogether do well. If it be true that the principal part of beauty is in decent motion, certainly it is no marvel, though persons in years seem many times more amiable; pulchrorum autumnus pulcher; for no youth can be comely but by pardon, and considering the youth, as to make up the comeliness. Beauty is as summer fruits, which are easy to corrupt, and cannot last; and for the most part it makes a dissolute youth, and an age a little out of countenance; but yet certainly again, if it light well, it maketh virtue shine, and vices blush.

Of Deformity

DEFORMED persons are commonly even with nature; for as nature hath done ill by them, so do they by nature; being for the most part (as the Scripture saith) void of natural affection; and so they have their revenge of nature. Certainly there is a consent, between the body and the mind; and where nature erreth in the one, she ventureth in the other. Ubi peccat in uno, periclitatur in altero. But because there is, in man, an election touching the frame of his mind, and a necessity in the frame of his body, the stars of natural inclination are sometimes obscured, by the sun of discipline and virtue. Therefore it is good to consider of deformity, not as a sign, which is more deceivable; but as a cause, which seldom faileth of the effect. Whosoever hath anything fixed in his person, that doth induce contempt, hath also a perpetual spur in himself, to rescue and deliver himself from scorn. Therefore all deformed persons, are extreme bold. First, as in their own defence, as being exposed to scorn; but in process of time, by a general habit. Also it stirreth in them industry, and especially of this kind, to watch and observe the weakness of others, that they may have somewhat to repay. Again, in their superiors, it quencheth jealousy towards them, as persons that they think they may, at pleasure, despise: and it layeth their competitors and emulators asleep; as never believing they should be in possibility of advancement, till they see them in possession. So that upon the matter, in a great wit, deformity is an advantage to rising. Kings in ancient times (and at this present in some countries) were wont to put great trust in eunuchs; because they that are envious towards all are more obnoxious and officious, towards one. But yet their trust towards them, hath rather been as to good spials, and good whisperers, than good magistrates and officers. And much like is the reason of deformed persons. Still the ground is, they will, if they be of spirit, seek to free themselves from scorn; which must be either by virtue or malice; and therefore let it not be marvelled, if sometimes they prove excellent persons; as was

Agesilaus, Zanger the son of Solyman, AEsop, Gasca, President of Peru; and Socrates may go likewise amongst them; with others.

Of Building

HOUSES are built to live in, and not to look on; therefore let use be preferred before uniformity, except where both may be had. Leave the goodly fabrics of houses, for beauty only, to the enchanted palaces of the poets; who build them with small cost. He that builds a fair house, upon an ill seat, committeth himself to prison. Neither do I reckon it an ill seat, only where the air is unwholesome; but likewise where the air is unequal; as you shall see many fine seats set upon a knap of ground, environed with higher hills round about it; whereby the heat of the sun is pent in, and the wind gathereth as in troughs; so as you shall have, and that suddenly, as great diversity of heat and cold as if you dwelt in several places. Neither is it ill air only that maketh an ill seat, but ill ways, ill markets; and, if you will consult with Momus, ill neighbors. I speak not of many more; want of water; want of wood, shade, and shelter; want of fruitfulness, and mixture of grounds of several natures; want of prospect; want of level grounds; want of places at some near distance for sports of hunting, hawking, and races; too near the sea, too remote; having the commodity of navigable rivers, or the discommodity of their overflowing; too far off from great cities, which may hinder business, or too near them, which lurcheth all provisions, and maketh everything dear; where a man hath a great living laid together, and where he is scanted: all which, as it is impossible perhaps to find together, so it is good to know them, and think of them, that a man may take as many as he can; and if he have several dwellings, that he sort them so that what he wanteth in the one, he may find in the other. Lucullus answered Pompey well; who, when he saw his stately galleries, and rooms so large and lightsome, in one of his houses, said, Surely an excellent place for summer, but how do you in winter? Lucullus answered, Why, do you not think me as wise as some fowl are, that ever change their abode towards the winter?

To pass from the seat, to the house itself; we will do as Cicero doth in the orator’s art; who writes books De Oratore, and a book he entitles Orator;

whereof the former, delivers the precepts of the art, and the latter, the perfection. We will therefore describe a princely palace, making a brief model thereof. For it is strange to see, now in Europe, such huge buildings as the Vatican and Escurial and some others be, and yet scarce a very fair room in them.

First, therefore, I say you cannot have a perfect palace except you have two several sides; a side for the banquet, as it is spoken of in the book of Hester, and a side for the household; the one for feasts and triumphs, and the other for dwelling. I understand both these sides to be not only returns, but parts of the front; and to be uniform without, though severally partitioned within; and to be on both sides of a great and stately tower, in the midst of the front, that, as it were, joineth them together on either hand. I would have on the side of the banquet, in front, one only goodly room above stairs, of some forty foot high; and under it a room for a dressing, or preparing place, at times of triumphs. On the other side, which is the household side, I wish it divided at the first, into a hall and a chapel (with a partition between); both of good state and bigness; and those not to go all the length, but to have at the further end, a winter and a summer parlor, both fair. And under these rooms, a fair and large cellar, sunk under ground; and likewise some privy kitchens, with butteries and pantries, and the like. As for the tower, I would have it two stories, of eighteen foot high apiece, above the two wings; and a goodly leads upon the top, railed with statuas interposed; and the same tower to be divided into rooms, as shall be thought fit. The stairs likewise to the upper rooms, let them be upon a fair open newel, and finely railed in, with images of wood, cast into a brass color; and a very fair landing-place at the top. But this to be, if you do not point any of the lower rooms, for a dining place of servants. For otherwise, you shall have the servants' dinner after your own: for the steam of it, will come up as in a tunnel. And so much for the front. Only I understand the height of the first stairs to be sixteen foot, which is the height of the lower room.

Beyond this front, is there to be a fair court, but three sides of it, of a far lower building than the front. And in all the four corners of that court, fair staircases, cast into turrets, on the outside, and not within the row of buildings

themselves. But those towers, are not to be of the height of the front, but rather proportionable to the lower building. Let the court not be paved, for that striketh up a great heat in summer, and much cold in winter. But only some side alleys, with a cross, and the quarters to graze, being kept shorn, but not too near shorn. The row of return on the banquet side, let it be all stately galleries: in which galleries let there be three, or five, fine cupolas in the length of it, placed at equal distance; and fine colored windows of several works. On the household side, chambers of presence and ordinary entertainments, with some bed-chambers; and let all three sides be a double house, without thorough lights on the sides, that you may have rooms from the sun, both for forenoon and afternoon. Cast it also, that you may have rooms, both for summer and winter; shady for summer, and warm for winter. You shall have sometimes fair houses so full of glass, that one cannot tell where to become, to be out of the sun or cold. For inbowed windows, I hold them of good use (in cities, indeed, upright do better, in respect of the uniformity towards the street); for they be pretty retiring places for conference; and besides, they keep both the wind and sun off; for that which would strike almost through the room, doth scarce pass the window. But let them be but few, four in the court, on the sides only.

Beyond this court, let there be an inward court, of the same square and height; which is to be environed with the garden on all sides; and in the inside, cloistered on all sides, upon decent and beautiful arches, as high as the first story. On the under story, towards the garden, let it be turned to a grotto, or a place of shade, or estivation. And only have opening and windows towards the garden; and be level upon the floor, no whit sunken under ground, to avoid all dampishness. And let there be a fountain, or some fair work of statuas, in the midst of this court; and to be paved as the other court was. These buildings to be for privy lodgings on both sides; and the end for privy galleries. Whereof you must foresee that one of them be for an infirmary, if the prince or any special person should be sick, with chambers, bed-chamber, antecamera, and recamera joining to it. This upon the second story. Upon the ground story, a fair gallery, open, upon pillars; and upon the third story likewise, an open gallery, upon

pillars, to take the prospect and freshness of the garden. At both corners of the further side, by way of return, let there be two delicate or rich cabinets, daintily paved, richly hanged, glazed with crystalline glass, and a rich cupola in the midst; and all other elegancy that may be thought upon. In the upper gallery too, I wish that there may be, if the place will yield it, some fountains running in divers places from the wall, with some fine avoidances. And thus much for the model of the palace; save that you must have, before you come to the front, three courts. A green court plain, with a wall about it; a second court of the same, but more garnished, with little turrets, or rather embellishments, upon the wall; and a third court, to make a square with the front, but not to be built, nor yet enclosed with a naked wall, but enclosed with terraces, leaded aloft, and fairly garnished, on the three sides; and cloistered on the inside, with pillars, and not with arches below. As for offices, let them stand at distance, with some low galleries, to pass from them to the palace itself.

Of Gardens

GOD Almighty first planted a garden. And indeed it is the purest of human pleasures. It is the greatest refreshment to the spirits of man; without which, buildings and palaces are but gross handiworks; and a man shall ever see, that when ages grow to civility and elegancy, men come to build stately sooner than to garden finely; as if gardening were the greater perfection. I do hold it, in the royal ordering of gardens, there ought to be gardens, for all the months in the year; in which severally things of beauty may be then in season. For December, and January, and the latter part of November, you must take such things as are green all winter: holly; ivy; bays; juniper; cypress-trees; yew; pine-apple-trees; fir-trees; rosemary; lavender; periwinkle, the white, the purple, and the blue; germander; flags; orange-trees; lemon-trees; and myrtles, if they be stoved; and sweet marjoram, warm set. There followeth, for the latter part of January and February, the mezereon-tree, which then blossoms; crocus vernus, both the yellow and the grey; primroses, anemones; the early tulippa; hyacinthus orientalis; chamairis; fritellaria. For March, there come violets, specially the single blue, which are the earliest; the yellow daffodil; the daisy; the almond-tree in blossom; the peach-tree in blossom; the cornelian-tree in blossom; sweetbriar. In April follow the double white violet; the wallflower; the stock-gilliflower; the cowslip; flowerdelices, and lilies of all natures; rosemary-flowers; the tulippa; the double peony; the pale daffodil; the French honeysuckle; the cherry-tree in blossom; the damson and plum-trees in blossom; the white thorn in leaf; the lilac-tree. In May and June come pinks of all sorts, specially the blushpink; roses of all kinds, except the musk, which comes later; honeysuckles; strawberries; bugloss; columbine; the French marigold, flos Africanus; cherry-tree in fruit; ribes; figs in fruit; rasps; vineflowers; lavender in flowers; the sweet satyrian, with the white flower; herba muscaria; lilium convallium; the apple-tree in blossom. In July come gilliflowers of all varieties; musk-roses; the lime-tree in blossom; early pears and plums in fruit; jennetings, codlins. In August come

plums of all sorts in fruit; pears; apricocks; berberries; filberds; musk-melons; monks-hoods, of all colors. In September come grapes; apples; poppies of all colors; peaches; melocotones; nectarines; cornelians; wardens; quinces. In October and the beginning of November come services; medlars; bullaces; roses cut or removed to come late; hollyhocks; and such like. These particulars are for the climate of London; but my meaning is perceived, that you may have ver perpetuum, as the place affords.

And because the breath of flowers is far sweeter in the air (where it comes and goes like the warbling of music) than in the hand, therefore nothing is more fit for that delight, than to know what be the flowers and plants that do best perfume the air. Roses, damask and red, are fast flowers of their smells; so that you may walk by a whole row of them, and find nothing of their sweetness; yea though it be in a morning's dew. Bays likewise yield no smell as they grow. Rosemary little; nor sweet marjoram. That which above all others yields the sweetest smell in the air is the violet, specially the white double violet, which comes twice a year; about the middle of April, and about Bartholomew-tide. Next to that is the musk-rose. Then the strawberry-leaves dying, which yield a most excellent cordial smell. Then the flower of vines; it is a little dust, like the dust of a bent, which grows upon the cluster in the first coming forth. Then sweetbriar. Then wallflowers, which are very delightful to be set under a parlor or lower chamber window. Then pinks and gilliflowers, especially the matted pink and clove gilliflower. Then the flowers of the lime-tree. Then the honeysuckles, so they be somewhat afar off. Of beanflowers I speak not, because they are field flowers. But those which perfume the air most delightfully, not passed by as the rest, but being trodden upon and crushed, are three; that is, burnet, wildthyme, and watermints. Therefore you are to set whole alleys of them, to have the pleasure when you walk or tread.

For gardens (speaking of those which are indeed princelike, as we have done of buildings), the contents ought not well to be under thirty acres of ground; and to be divided into three parts; a green in the entrance; a heath or desert in the going forth; and the main garden in the midst; besides alleys on both sides. And I

like well that four acres of ground be assigned to the green; six to the heath; four and four to either side; and twelve to the main garden. The green hath two pleasures: the one, because nothing is more pleasant to the eye than green grass kept finely shorn; the other, because it will give you a fair alley in the midst, by which you may go in front upon a stately hedge, which is to enclose the garden. But because the alley will be long, and, in great heat of the year or day, you ought not to buy the shade in the garden, by going in the sun through the green, therefore you are, of either side the green, to plant a covert alley upon carpenter's work, about twelve foot in height, by which you may go in shade into the garden. As for the making of knots or figures, with divers colored earths, that they may lie under the windows of the house on that side which the garden stands, they be but toys; you may see as good sights, many times, in tarts. The garden is best to be square, encompassed on all the four sides with a stately arched hedge. The arches to be upon pillars of carpenter's work, of some ten foot high, and six foot broad; and the spaces between of the same dimension with the breadth of the arch. Over the arches let there be an entire hedge of some four foot high, framed also upon carpenter's work; and upon the upper hedge, over every arch, a little turret, with a belly, enough to receive a cage of birds: and over every space between the arches some other little figure, with broad plates of round colored glass gilt, for the sun to play upon. But this hedge I intend to be raised upon a bank, not steep, but gently slope, of some six foot, set all with flowers. Also I understand, that this square of the garden, should not be the whole breadth of the ground, but to leave on either side, ground enough for diversity of side alleys; unto which the two covert alleys of the green, may deliver you. But there must be no alleys with hedges, at either end of this great enclosure; not at the hither end, for letting your prospect upon this fair hedge from the green; nor at the further end, for letting your prospect from the hedge, through the arches upon the heath.

For the ordering of the ground, within the great hedge, I leave it to variety of device; advising nevertheless, that whatsoever form you cast it into, first, it be not too busy, or full of work. Wherein I, for my part, do not like images cut out

in juniper or other garden stuff; they be for children. Little low hedges, round, like welts, with some pretty pyramids, I like well; and in some places, fair columns upon frames of carpenter's work. I would also have the alleys, spacious and fair. You may have closer alleys, upon the side grounds, but none in the main garden. I wish also, in the very middle, a fair mount, with three ascents, and alleys, enough for four to walk abreast; which I would have to be perfect circles, without any bulwarks or embossments; and the whole mount to be thirty foot high; and some fine banqueting-house, with some chimneys neatly cast, and without too much glass.

For fountains, they are a great beauty and refreshment; but pools mar all, and make the garden unwholesome, and full of flies and frogs. Fountains I intend to be of two natures: the one that sprinkleth or spouteth water; the other a fair receipt of water, of some thirty or forty foot square, but without fish, or slime, or mud. For the first, the ornaments of images gilt, or of marble, which are in use, do well: but the main matter is so to convey the water, as it never stay, either in the bowls or in the cistern; that the water be never by rest discolored, green or red or the like; or gather any mossiness or putrefaction. Besides that, it is to be cleansed every day by the hand. Also some steps up to it, and some fine pavement about it, doth well. As for the other kind of fountain, which we may call a bathing pool, it may admit much curiosity and beauty; wherewith we will not trouble ourselves: as, that the bottom be finely paved, and with images; the sides likewise; and withal embellished with colored glass, and such things of lustre; encompassed also with fine rails of low statuas. But the main point is the same which we mentioned in the former kind of fountain; which is, that the water be in perpetual motion, fed by a water higher than the pool, and delivered into it by fair spouts, and then discharged away under ground, by some equality of bores, that it stay little. And for fine devices, of arching water without spilling, and making it rise in several forms (of feathers, drinking glasses, canopies, and the like), they be pretty things to look on, but nothing to health and sweetness.

For the heath, which was the third part of our plot, I wish it to be framed, as much as may be, to a natural wildness. Trees I would have none in it, but some thickets made only of sweetbriar and honeysuckle, and some wild vine amongst; and the ground set with violets, strawberries, and primroses. For these are sweet, and prosper in the shade. And these to be in the heath, here and there, not in any order. I like also little heaps, in the nature of mole-hills (such as are in wild heaths), to be set, some with wild thyme; some with pinks; some with germander, that gives a good flower to the eye; some with periwinkle; some with violets; some with strawberries; some with cowslips; some with daisies; some with red roses; some with lilium convallium; some with sweet-williams red; some with bear's-foot: and the like low flowers, being withal sweet and sightly. Part of which heaps, are to be with standards of little bushes pricked upon their top, and part without. The standards to be roses; juniper; holly; berberries (but here and there, because of the smell of their blossoms); red currants; gooseberries; rosemary; bays; sweetbriar; and such like. But these standards to be kept with cutting, that they grow not out of course.

For the side grounds, you are to fill them with variety of alleys, private, to give a full shade, some of them, wheresoever the sun be. You are to frame some of them, likewise, for shelter, that when the wind blows sharp you may walk as in a gallery. And those alleys must be likewise hedged at both ends, to keep out the wind; and these closer alleys must be ever finely gravelled, and no grass, because of going wet. In many of these alleys, likewise, you are to set fruit-trees of all sorts; as well upon the walls, as in ranges. And this would be generally observed, that the borders wherein you plant your fruit-trees, be fair and large, and low, and not steep; and set with fine flowers, but thin and sparingly, lest they deceive the trees. At the end of both the side grounds, I would have a mount of some pretty height, leaving the wall of the enclosure breast high, to look abroad into the fields.

For the main garden, I do not deny, but there should be some fair alleys ranged on both sides, with fruit-trees; and some pretty tufts of fruit-trees, and arbors with seats, set in some decent order; but these to be by no means set too

thick; but to leave the main garden so as it be not close, but the air open and free. For as for shade, I would have you rest upon the alleys of the side grounds, there to walk, if you be disposed, in the heat of the year or day; but to make account, that the main garden is for the more temperate parts of the year; and in the heat of summer, for the morning and the evening, or overcast days.

For aviaries, I like them not, except they be of that largeness as they may be turfed, and have living plants and bushes set in them; that the birds may have more scope, and natural nesting, and that no foulness appear in the floor of the aviary. So I have made a platform of a princely garden, partly by precept, partly by drawing, not a model, but some general lines of it; and in this I have spared for no cost. But it is nothing for great princes, that for the most part taking advice with workmen, with no less cost set their things together; and sometimes add statuas and such things for state and magnificence, but nothing to the true pleasure of a garden.

Of Negotiating

IT IS generally better to deal by speech than by letter; and by the mediation of a third than by a man's self. Letters are good, when a man would draw an answer by letter back again; or when it may serve for a man's justification afterwards to produce his own letter; or where it may be danger to be interrupted, or heard by pieces. To deal in person is good, when a man's face breedeth regard, as commonly with inferiors; or in tender cases, where a man's eye, upon the countenance of him with whom he speaketh, may give him a direction how far to go; and generally, where a man will reserve to himself liberty, either to disavow or to expound. In choice of instruments, it is better to choose men of a plainer sort, that are like to do that, that is committed to them, and to report back again faithfully the success, than those that are cunning, to contrive, out of other men's business, somewhat to grace themselves, and will help the matter in report for satisfaction's sake. Use also such persons as affect the business, wherein they are employed; for that quickeneth much; and such, as are fit for the matter; as bold men for expostulation, fair-spoken men for persuasion, crafty men for inquiry and observation, froward, and absurd men, for business that doth not well bear out itself. Use also such as have been lucky, and prevailed before, in things wherein you have employed them; for that breeds confidence, and they will strive to maintain their prescription. It is better to sound a person, with whom one deals afar off, than to fall upon the point at first; except you mean to surprise him by some short question. It is better dealing with men in appetite, than with those that are where they would be. If a man deal with another upon conditions, the start or first performance is all; which a man cannot reasonably demand, except either the nature of the thing be such, which must go before; or else a man can persuade the other party, that he shall still need him in some other thing; or else that he be counted the honester man. All practice is to discover, or to work. Men discover themselves in trust, in passion, at unawares, and of necessity, when they would have somewhat done, and cannot find an apt pretext.

If you would work any man, you must either know his nature and fashions, and so lead him; or his ends, and so persuade him; or his weakness and disadvantages, and so awe him; or those that have interest in him, and so govern him. In dealing with cunning persons, we must ever consider their ends, to interpret their speeches; and it is good to say little to them, and that which they least look for. In all negotiations of difficulty, a man may not look to sow and reap at once; but must prepare business, and so ripen it by degrees.

Of Followers And Friends

COSTLY followers are not to be liked; lest while a man maketh his train longer, he make his wings shorter. I reckon to be costly, not them alone which charge the purse, but which are wearisome, and importune in suits. Ordinary followers ought to challenge no higher conditions, than countenance, recommendation, and protection from wrongs. Factious followers are worse to be liked, which follow not upon affection to him, with whom they range themselves, but upon discontentment conceived against some other; whereupon commonly ensueth that ill intelligence, that we many times see between great personages. Likewise glorious followers, who make themselves as trumpets of the commendation of those they follow, are full of inconvenience; for they taint business through want of secrecy; and they export honor from a man, and make him a return in envy. There is a kind of followers likewise, which are dangerous, being indeed espials; which inquire the secrets of the house, and bear tales of them, to others. Yet such men, many times, are in great favor; for they are officious, and commonly exchange tales. The following by certain estates of men, answerable to that, which a great person himself professeth (as of soldiers, to him that hath been employed in the wars, and the like), hath ever been a thing civil, and well taken, even in monarchies; so it be without too much pomp or popularity. But the most honorable kind of following, is to be followed as one, that apprehendeth to advance virtue, and desert, in all sorts of persons. And yet, where there is no eminent odds in sufficiency, it is better to take with the more passable, than with the more able. And besides, to speak truth, in base times, active men are of more use than virtuous. It is true that in government, it is good to use men of one rank equally: for to countenance some extraordinarily, is to make them insolent, and the rest discontent; because they may claim a due. But contrariwise, in favor, to use men with much difference and election is good; for it maketh the persons preferred more thankful, and the rest more officious: because all is of favor. It is good discretion, not to make too much of any man at the first; because one

cannot hold out that proportion. To be governed (as we call it) by one is not safe; for it shows softness, and gives a freedom, to scandal and disreputation; for those, that would not censure or speak ill of a man immediately, will talk more boldly of those that are so great with them, and thereby wound their honor. Yet to be distracted with many is worse; for it makes men to be of the last impression, and full of change. To take advice of some few friends, is ever honorable; for lookers-on many times see more than gamesters; and the vale best discovereth the hill. There is little friendship in the world, and least of all between equals, which was wont to be magnified. That that is, is between superior and inferior, whose fortunes may comprehend the one the other.

Of Suitors

MANY ill matters and projects are undertaken; and private suits do putrefy the public good. Many good matters, are undertaken with bad minds; I mean not only corrupt minds, but crafty minds, that intend not performance. Some embrace suits, which never mean to deal effectually in them; but if they see there may be life in the matter, by some other mean, they will be content to win a thank, or take a second reward, or at least to make use, in the meantime, of the suitor's hopes. Some take hold of suits, only for an occasion to cross some other; or to make an information, whereof they could not otherwise have apt pretext; without care what become of the suit, when that turn is served; or, generally, to make other men's business a kind of entertainment, to bring in their own. Nay, some undertake suits, with a full purpose to let them fall; to the end to gratify the adverse party, or competitor. Surely there is in some sort a right in every suit; either a right of equity, if it be a suit of controversy; or a right of desert, if it be a suit of petition. If affection lead a man to favor the wrong side in justice, let him rather use his countenance to compound the matter, than to carry it. If affection lead a man to favor the less worthy in desert, let him do it, without depraving or disabling the better deserver. In suits which a man doth not well understand, it is good to refer them to some friend of trust and judgment, that may report, whether he may deal in them with honor: but let him choose well his referendaries, for else he may be led by the nose. Suitors are so distasted with delays and abuses, that plain dealing, in denying to deal in suits at first, and reporting the success barely, and in challenging no more thanks than one hath deserved, is grown not only honorable, but also gracious. In suits of favor, the first coming ought to take little place: so far forth, consideration may be had of his trust, that if intelligence of the matter could not otherwise have been had, but by him, advantage be not taken of the note, but the party left to his other means; and in some sort recompensed, for his discovery. To be ignorant of the value of a suit, is simplicity; as well as to be ignorant of the right thereof, is want of

conscience. Secrecy in suits, is a great mean of obtaining; for voicing them to be in forwardness, may discourage some kind of suitors, but doth quicken and awake others. But timing of the suit is the principal. Timing, I say, not only in respect of the person that should grant it, but in respect of those, which are like to cross it. Let a man, in the choice of his mean, rather choose the fittest mean, than the greatest mean; and rather them that deal in certain things, than those that are general. The reparation of a denial, is sometimes equal to the first grant; if a man show himself neither dejected nor discontented. Iniquum petas ut aequum feras is a good rule, where a man hath strength of favor: but otherwise, a man were better rise in his suit; for he, that would have ventured at first to have lost the suitor, will not in the conclusion lose both the suitor, and his own former favor. Nothing is thought so easy a request to a great person, as his letter; and yet, if it be not in a good cause, it is so much out of his reputation. There are no worse instruments, than these general contrivers of suits; for they are but a kind of poison, and infection, to public proceedings.

Of Studies

STUDIES serve for delight, for ornament, and for ability. Their chief use for delight, is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgment, and disposition of business. For expert men can execute, and perhaps judge of particulars, one by one; but the general counsels, and the plots and marshalling of affairs, come best, from those that are learned. To spend too much time in studies is sloth; to use them too much for ornament, is affectation; to make judgment wholly by their rules, is the humor of a scholar. They perfect nature, and are perfected by experience: for natural abilities are like natural plants, that need proyning, by study; and studies themselves, do give forth directions too much at large, except they be bounded in by experience. Crafty men contemn studies, simple men admire them, and wise men use them; for they teach not their own use; but that is a wisdom without them, and above them, won by observation. Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider. Some books are to be tasted, others to be swallowed, and some few to be chewed and digested; that is, some books are to be read only in parts; others to be read, but not curiously; and some few to be read wholly, and with diligence and attention. Some books also may be read by deputy, and extracts made of them by others; but that would be only in the less important arguments, and the meaner sort of books, else distilled books are like common distilled waters, flashy things. Reading maketh a full man; conference a ready man; and writing an exact man. And therefore, if a man write little, he had need have a great memory; if he confer little, he had need have a present wit: and if he read little, he had need have much cunning, to seem to know, that he doth not. Histories make men wise; poets witty; the mathematics subtile; natural philosophy deep; moral grave; logic and rhetoric able to contend. Abeunt studia in mores. Nay, there is no stond or impediment in the wit, but may be wrought out by fit studies; like as diseases of the body, may have appropriate exercises. Bowling is good for the stone and

reins; shooting for the lungs and breast; gentle walking for the stomach; riding for the head; and the like. So if a man's wit be wandering, let him study the mathematics; for in demonstrations, if his wit be called away never so little, he must begin again. If his wit be not apt to distinguish or find differences, let him study the Schoolmen; for they are cymini sectores. If he be not apt to beat over matters, and to call up one thing to prove and illustrate another, let him study the lawyers' cases. So every defect of the mind, may have a special receipt.

Of Faction

MANY have an opinion not wise, that for a prince to govern his estate, or for a great person to govern his proceedings, according to the respect of factions, is a principal part of policy; whereas contrariwise, the chiefest wisdom, is either in ordering those things which are general, and wherein men of several factions do nevertheless agree; or in dealing with correspondence to particular persons, one by one. But I say not that the considerations of factions, is to be neglected. Mean men, in their rising, must adhere; but great men, that have strength in themselves, were better to maintain themselves indifferent, and neutral. Yet even in beginners, to adhere so moderately, as he be a man of the one faction, which is most passable with the other, commonly giveth best way. The lower and weaker faction, is the firmer in conjunction; and it is often seen, that a few that are stiff, do tire out a greater number, that are more moderate. When one of the factions is extinguished, the remaining subdivideth; as the faction between Lucullus, and the rest of the nobles of the senate (which they called Optimates) held out awhile, against the faction of Pompey and Caesar; but when the senate's authority was pulled down, Caesar and Pompey soon after brake. The faction or party of Antonius and Octavianus Caesar, against Brutus and Cassius, held out likewise for a time; but when Brutus and Cassius were overthrown, then soon after, Antonius and Octavianus brake and subdivided. These examples are of wars, but the same holdeth in private factions. And therefore, those that are seconds in factions, do many times, when the faction subdivideth, prove principals; but many times also, they prove ciphers and cashiered; for many a man's strength is in opposition; and when that faileth, he groweth out of use. It is commonly seen, that men, once placed, take in with the contrary faction, to that by which they enter: thinking belike, that they have the first sure, and now are ready for a new purchase. The traitor in faction, lightly goeth away with it; for when matters have stuck long in balancing, the winning of some one man casteth them, and he getteth all the thanks. The even carriage between two factions,

proceedeth not always of moderation, but of a trueness to a man's self, with end to make use of both. Certainly in Italy, they hold it a little suspect in popes, when they have often in their mouth Padre commune: and take it to be a sign of one, that meaneth to refer all to the greatness of his own house. Kings had need beware, how they side themselves, and make themselves as of a faction or party; for leagues within the state, are ever pernicious to monarchies: for they raise an obligation, paramount to obligation of sovereignty, and make the king tanquam unus ex nobis; as was to be seen in the League of France. When factions are carried too high and too violently, it is a sign of weakness in princes; and much to the prejudice, both of their authority and business. The motions of factions under kings ought to be, like the motions (as the astronomers speak) of the inferior orbs, which may have their proper motions, but yet still are quietly carried, by the higher motion of primum mobile.

Of Ceremonies, And Respects

HE THAT is only real, had need have exceeding great parts of virtue; as the stone had need to be rich, that is set without foil. But if a man mark it well, it is, in praise and commendation of men, as it is in gettings and gains: for the proverb is true, That light gains make heavy purses; for light gains come thick, whereas great, come but now and then. So it is true, that small matters win great commendation, because they are continually in use and in note: whereas the occasion of any great virtue, cometh but on festivals. Therefore it doth much add to a man's reputation, and is (as Queen Isabella said) like perpetual letters commendatory, to have good forms. To attain them, it almost sufficeth not to despise them; for so shall a man observe them in others; and let him trust himself with the rest. For if he labor too much to express them, he shall lose their grace; which is to be natural and unaffected. Some men's behavior is like a verse, wherein every syllable is measured; how can a man comprehend great matters, that breaketh his mind too much, to small observations? Not to use ceremonies at all, is to teach others not to use them again; and so diminisheth respect to himself; especially they be not to be omitted, to strangers and formal natures; but the dwelling upon them, and exalting them above the moon, is not only tedious, but doth diminish the faith and credit of him that speaks. And certainly, there is a kind of conveying, of effectual and imprinting passages amongst compliments, which is of singular use, if a man can hit upon it. Amongst a man's peers, a man shall be sure of familiarity; and therefore it is good, a little to keep state. Amongst a man's inferiors one shall be sure of reverence; and therefore it is good, a little to be familiar. He that is too much in anything, so that he giveth another occasion of satiety, maketh himself cheap. To apply one's self to others, is good; so it be with demonstration, that a man doth it upon regard, and not upon facility. It is a good precept generally, in seconding another, yet to add somewhat of one's own: as if you will grant his opinion, let it be with some distinction; if you will follow his motion, let it be with condition; if you allow

his counsel, let it be with alleging further reason. Men had need beware, how they be too perfect in compliments; for be they never so sufficient otherwise, their enviers will be sure to give them that attribute, to the disadvantage of their greater virtues. It is loss also in business, to be too full of respects, or to be curious, in observing times and opportunities. Solomon saith, He that considereth the wind, shall not sow, and he that looketh to the clouds, shall not reap. A wise man will make more opportunities, than he finds. Men’s behavior should be, like their apparel, not too strait or point device, but free for exercise or motion.

Of Praise

PRAISE is the reflection of virtue; but it is as the glass or body, which giveth the reflection. If it be from the common people, it is commonly false and naught; and rather followeth vain persons, than virtuous. For the common people understand not many excellent virtues. The lowest virtues draw praise from them; the middle virtues work in them astonishment or admiration; but of the highest virtues, they have no sense of perceiving at all. But shows, and species virtutibus similes, serve best with them. Certainly fame is like a river, that beareth up things light and swoln, and drowns things weighty and solid. But if persons of quality and judgment concur, then it is (as the Scripture saith) nomen bonum instar unguenti fragrantis. It fireth all round about, and will not easily away. For the odors of ointments are more durable, than those of flowers. There be so many false points of praise, that a man may justly hold it a suspect. Some praises proceed merely of flattery; and if he be an ordinary flatterer, he will have certain common attributes, which may serve every man; if he be a cunning flatterer, he will follow the archflatterer, which is a man's self; and wherein a man thinketh best of himself, therein the flatterer will uphold him most: but if he be an impudent flatterer, look wherein a man is conscious to himself, that he is most defective, and is most out of countenance in himself, that will the flatterer entitle him to perforce, spreta conscientia. Some praises come of good wishes and respects, which is a form due, in civility, to kings and great persons, laudando praecipere, when by telling men what they are, they represent to them, what they should be. Some men are praised maliciously, to their hurt, thereby to stir envy and jealousy towards them: pessimum genus inimicorum laudantium; insomuch as it was a proverb, amongst the Grecians, that he that was praised to his hurt, should have a push rise upon his nose; as we say, that a blister will rise upon one's tongue, that tells a lie. Certainly moderate praise, used with opportunity, and not vulgar, is that which doth the good. Solomon saith, He that praiseth his friend aloud, rising early, it shall be to him no better than a curse.

Too much magnifying of man or matter, doth irritate contradiction, and procure envy and scorn. To praise a man's self, cannot be decent, except it be in rare cases; but to praise a man's office or profession, he may do it with good grace, and with a kind of magnanimity. The cardinals of Rome, which are theologues, and friars, and Schoolmen, have a phrase of notable contempt and scorn towards civil business: for they call all temporal business of wars, embassages, judicature, and other employments, sbirrerie, which is under-sheriffries; as if they were but matters, for under-sheriffs and catchpoles: though many times those under-sheriffries do more good, than their high speculations. St. Paul, when he boasts of himself, he doth oft interlace, I speak like a fool; but speaking of his calling, he saith, magnificabo apostolatum meum.

Of Vain-glory

IT WAS prettily devised of AEsop, The fly sat upon the axle-tree of the chariot wheel, and said, What a dust do I raise! So are there some vain persons, that whatsoever goeth alone, or moveth upon greater means, if they have never so little hand in it, they think it is they that carry it. They that are glorious, must needs be factious; for all bravery stands upon comparisons. They must needs be violent, to make good their own vaunts. Neither can they be secret, and therefore not effectual; but according to the French proverb, Beaucoup de bruit, peu de fruit; Much bruit little fruit. Yet certainly, there is use of this quality in civil affairs. Where there is an opinion and fame to be created, either of virtue or greatness, these men are good trumpeters. Again, as Titus Livius noteth, in the case of Antiochus and the AEtolians, There are sometimes great effects, of cross lies; as if a man, that negotiates between two princes, to draw them to join in a war against the third, doth extol the forces of either of them, above measure, the one to the other: and sometimes he that deals between man and man, raiseth his own credit with both, by pretending greater interest than he hath in either. And in these and the like kinds, it often falls out, that somewhat is produced of nothing; for lies are sufficient to breed opinion, and opinion brings on substance. In militar commanders and soldiers, vain-glory is an essential point; for as iron sharpens iron, so by glory, one courage sharpeneth another. In cases of great enterprise upon charge and adventure, a composition of glorious natures, doth put life into business; and those that are of solid and sober natures, have more of the ballast, than of the sail. In fame of learning, the flight will be slow without some feathers of ostentation. Qui de contemnenda gloria libros scribunt, nomen, suum inscribunt. Socrates, Aristotle, Galen, were men full of ostentation. Certainly vain-glory helpeth to perpetuate a man’s memory; and virtue was never so beholding to human nature, as it received his due at the second hand. Neither had the fame of Cicero, Seneca, Plinius Secundus, borne her age so well, if it had not been joined with some vanity in themselves; like unto varnish, that

makes ceilings not only shine but last. But all this while, when I speak of vain-glory, I mean not of that property, that Tacitus doth attribute to Mucianus; Omnium quae dixerat feceratque arte quadam ostentator: for that proceeds not of vanity, but of natural magnanimity and discretion; and in some persons, is not only comely, but gracious. For excusations, cessions, modesty itself well governed, are but arts of ostentation. And amongst those arts, there is none better than that which Plinius Secundus speaketh of, which is to be liberal of praise and commendation to others, in that, wherein a man's self hath any perfection. For saith Pliny, very wittily, In commending another, you do yourself right; for he that you commend, is either superior to you in that you commend, or inferior. If he be inferior, if he be to be commended, you much more; if he be superior, if he be not to be commended, you much less. Glorious men are the scorn of wise men, the admiration of fools, the idols of parasites, and the slaves of their own vaunts.

Of Honor And Reputation

THE winning of honor, is but the revealing of a man's virtue and worth, without disadvantage. For some in their actions, do woo and effect honor and reputation, which sort of men, are commonly much talked of, but inwardly little admired. And some, contrariwise, darken their virtue in the show of it; so as they be undervalued in opinion. If a man perform that, which hath not been attempted before; or attempted and given over; or hath been achieved, but not with so good circumstance; he shall purchase more honor, than by effecting a matter of greater difficulty or virtue, wherein he is but a follower. If a man so temper his actions, as in some one of them he doth content every faction, or combination of people, the music will be the fuller. A man is an ill husband of his honor, that entereth into any action, the failing wherein may disgrace him, more than the carrying of it through, can honor him. Honor that is gained and broken upon another, hath the quickest reflection, like diamonds cut with facets. And therefore, let a man contend to excel any competitors of his in honor, in outshooting them, if he can, in their own bow. Discreet followers and servants, help much to reputation. Omnis fama a domesticis emanat. Envy, which is the canker of honor, is best extinguished by declaring a man's self in his ends, rather to seek merit than fame; and by attributing a man's successes, rather to divine Providence and felicity, than to his own virtue or policy.

The true marshalling of the degrees of sovereign honor, are these: In the first place are conditores imperiorum, founders of states and commonwealths; such as were Romulus, Cyrus, Caesar, Ottoman, Ismael. In the second place are legislatores, lawgivers; which are also called second founders, or perpetui principes, because they govern by their ordinances after they are gone; such were Lycurgus, Solon, Justinian, Eadgar, Alphonsus of Castile, the Wise, that made the Siete Partidas. In the third place are liberatores, or salvatores, such as compound the long miseries of civil wars, or deliver their countries from servitude of strangers or tyrants; as Augustus Caesar, Vespasianus, Aurelianus,

Theodoricus, King Henry the Seventh of England, King Henry the Fourth of France. In the fourth place are propagatores or propugnatores imperii; such as in honorable wars enlarge their territories, or make noble defence against invaders. And in the last place are patres patriae; which reign justly, and make the times good wherein they live. Both which last kinds need no examples, they are in such number. Degrees of honor, in subjects, are, first participes curarum, those upon whom, princes do discharge the greatest weight of their affairs; their right hands, as we call them. The next are duces belli, great leaders in war; such as are princes' lieutenants, and do them notable services in the wars. The third are gratiosi, favorites; such as exceed not this scantling, to be solace to the sovereign, and harmless to the people. And the fourth, negotiis pares; such as have great places under princes, and execute their places, with sufficiency. There is an honor, likewise, which may be ranked amongst the greatest, which happeneth rarely; that is, of such as sacrifice themselves to death or danger for the good of their country; as was M. Regulus, and the two Decii.

Of Judicature

JUDGES ought to remember, that their office is jus dicere, and not jus dare; to interpret law, and not to make law, or give law. Else will it be like the authority, claimed by the Church of Rome, which under pretext of exposition of Scripture, doth not stick to add and alter; and to pronounce that which they do not find; and by show of antiquity, to introduce novelty. Judges ought to be more learned, than witty, more reverend, than plausible, and more advised, than confident. Above all things, integrity is their portion and proper virtue. Cursed (saith the law) is he that removeth the landmark. The mislayer of a mere-stone is to blame. But it is the unjust judge, that is the capital remover of landmarks, when he defineth amiss, of lands and property. One foul sentence doth more hurt, than many foul examples. For these do but corrupt the stream, the other corrupteth the fountain. So with Solomon, Fons turbatus, et vena corrupta, est justus cadens in causa sua coram adversario. The office of judges may have reference unto the parties that use, unto the advocates that plead, unto the clerks and ministers of justice underneath them, and to the sovereign or state above them.

First, for the causes or parties that sue. There be (saith the Scripture) that turn judgment, into wormwood; and surely there be also, that turn it into vinegar; for injustice maketh it bitter, and delays make it sour. The principal duty of a judge, is to suppress force and fraud; whereof force is the more pernicious, when it is open, and fraud, when it is close and disguised. Add thereto contentious suits, which ought to be spewed out, as the surfeit of courts. A judge ought to prepare his way to a just sentence, as God useth to prepare his way, by raising valleys and taking down hills: so when there appeareth on either side an high hand, violent prosecution, cunning advantages taken, combination, power, great counsel, then is the virtue of a judge seen, to make inequality equal; that he may plant his judgment as upon an even ground. Qui fortiter emungit, elicit sanguinem; and where the wine-press is hard wrought, it yields a harsh wine, that tastes of the grape-stone. Judges must beware of hard constructions, and

strained inferences; for there is no worse torture, than the torture of laws. Specially in case of laws penal, they ought to have care, that that which was meant for terror, be not turned into rigor; and that they bring not upon the people, that shower whereof the Scripture speaketh, Pluet super eos laqueos; for penal laws pressed, are a shower of snares upon the people. Therefore let penal laws, if they have been sleepers of long, or if they be grown unfit for the present time, be by wise judges confined in the execution: Judicis officium est, ut res, ita tempora rerum, *etc.* In causes of life and death, judges ought (as far as the law permitteth) in justice to remember mercy; and to cast a severe eye upon the example, but a merciful eye upon the person.

Secondly, for the advocates and counsel that plead. Patience and gravity of hearing, is an essential part of justice; and an overspeaking judge is no well-tuned cymbal. It is no grace to a judge, first to find that, which he might have heard in due time from the bar; or to show quickness of conceit, in cutting off evidence or counsel too short; or to prevent information by questions, though pertinent. The parts of a judge in hearing, are four: to direct the evidence; to moderate length, repetition, or impertinency of speech; to recapitulate, select, and collate the material points, of that which hath been said; and to give the rule or sentence. Whatsoever is above these is too much; and proceedeth either of glory, and willingness to speak, or of impatience to hear, or of shortness of memory, or of want of a staid and equal attention. It is a strange thing to see, that the boldness of advocates should prevail with judges; whereas they should imitate God, in whose seat they sit; who represseth the presumptuous, and giveth grace to the modest. But it is more strange, that judges should have noted favorites; which cannot but cause multiplication of fees, and suspicion of by-ways. There is due from the judge to the advocate, some commendation and gracing, where causes are well handled and fair pleaded; especially towards the side which obtaineth not; for that upholds in the client, the reputation of his counsel, and beats down in him the conceit of his cause. There is likewise due to the public, a civil reprehension of advocates, where there appeareth cunning counsel, gross neglect, slight information, indiscreet pressing, or an overbold

defence. And let not the counsel at the bar, chop with the judge, nor wind himself into the handling of the cause anew, after the judge hath declared his sentence; but, on the other side, let not the judge meet the cause half way, nor give occasion to the party, to say his counsel or proofs were not heard.

Thirdly, for that that concerns clerks and ministers. The place of justice is an hallowed place; and therefore not only the bench, but the foot-place; and precincts and purprise thereof, ought to be preserved without scandal and corruption. For certainly grapes (as the Scripture saith) will not be gathered of thorns or thistles; neither can justice yield her fruit with sweetness, amongst the briars and brambles of catching and polling clerks, and ministers. The attendance of courts, is subject to four bad instruments. First, certain persons that are sowers of suits; which make the court swell, and the country pine. The second sort is of those, that engage courts in quarrels of jurisdiction, and are not truly amici curiae, but parasiti curiae, in puffing a court up beyond her bounds, for their own scraps and advantage. The third sort, is of those that may be accounted the left hands of courts; persons that are full of nimble and sinister tricks and shifts, whereby they pervert the plain and direct courses of courts, and bring justice into oblique lines and labyrinths. And the fourth, is the poller and exacter of fees; which justifies the common resemblance of the courts of justice, to the bush whereunto, while the sheep flies for defence in weather, he is sure to lose part of his fleece. On the other side, an ancient clerk, skilful in precedents, wary in proceeding, and understanding in the business of the court, is an excellent finger of a court; and doth many times point the way to the judge himself.

Fourthly, for that which may concern the sovereign and estate. Judges ought above all to remember the conclusion of the Roman Twelve Tables; Salus populi suprema lex; and to know that laws, except they be in order to that end, are but things captious, and oracles not well inspired. Therefore it is an happy thing in a state, when kings and states do often consult with judges; and again, when judges do often consult with the king and state: the one, when there is matter of law, intervenient in business of state; the other, when there is some consideration of state, intervenient in matter of law. For many times the things deduced to

judgment may be meum and tuum, when the reason and consequence thereof may trench to point of estate: I call matter of estate, not only the parts of sovereignty, but whatsoever introduceth any great alteration, or dangerous precedent; or concerneth manifestly any great portion of people. And let no man weakly conceive, that just laws and true policy have any antipathy; for they are like the spirits and sinews, that one moves with the other. Let judges also remember, that Solomon's throne was supported by lions on both sides: let them be lions, but yet lions under the throne; being circumspect that they do not check or oppose any points of sovereignty. Let not judges also be ignorant of their own right, as to think there is not left to them, as a principal part of their office, a wise use and application of laws. For they may remember, what the apostle saith of a greater law than theirs; Nos scimus quia lex bona est, modo quis ea utatur legitime.

Of Anger

TO SEEK to extinguish anger utterly, is but a bravery of the Stoics. We have better oracles: Be angry, but sin not. Let not the sun go down upon your anger. Anger must be limited and confined, both in race and in time. We will first speak how the natural inclination and habit to be angry, may be attempted and calmed. Secondly, how the particular motions of anger may be repressed, or at least refrained from doing mischief. Thirdly, how to raise anger, or appease anger in another.

For the first; there is no other way but to meditate, and ruminate well upon the effects of anger, how it troubles man's life. And the best time to do this, is to look back upon anger, when the fit is thoroughly over. Seneca saith well, That anger is like ruin, which breaks itself upon that it falls. The Scripture exhorteth us to possess our souls in patience. Whosoever is out of patience, is out of possession of his soul. Men must not turn bees;

... animasque in vulnere ponunt.

Anger is certainly a kind of baseness; as it appears well in the weakness of those subjects in whom it reigns; children, women, old folks, sick folks. Only men must beware, that they carry their anger rather with scorn, than with fear; so that they may seem rather to be above the injury, than below it; which is a thing easily done, if a man will give law to himself in it.

For the second point; the causes and motives of anger, are chiefly three. First, to be too sensible of hurt; for no man is angry, that feels not himself hurt; and therefore tender and delicate persons must needs be oft angry; they have so many things to trouble them, which more robust natures have little sense of. The next is, the apprehension and construction of the injury offered, to be, in the circumstances thereof, full of contempt: for contempt is that, which putteth an edge upon anger, as much or more than the hurt itself. And therefore, when men are ingenious in picking out circumstances of contempt, they do kindle their anger much. Lastly, opinion of the touch of a man's reputation, doth multiply

and sharpen anger. Wherein the remedy is, that a man should have, as Consalvo was wont to say, telam honoris crassiorem. But in all refrainings of anger, it is the best remedy to win time; and to make a man's self believe, that the opportunity of his revenge is not yet come, but that he foresees a time for it; and so to still himself in the meantime, and reserve it.

To contain anger from mischief, though it take hold of a man, there be two things, whereof you must have special caution. The one, of extreme bitterness of words, especially if they be aculeate and proper; for cummunia maledicta are nothing so much; and again, that in anger a man reveal no secrets; for that, makes him not fit for society. The other, that you do not peremptorily break off, in any business, in a fit of anger; but howsoever you show bitterness, do not act anything, that is not revocable.

For raising and appeasing anger in another; it is done chiefly by choosing of times, when men are frowardest and worst disposed, to incense them. Again, by gathering (as was touched before) all that you can find out, to aggravate the contempt. And the two remedies are by the contraries. The former to take good times, when first to relate to a man an angry business; for the first impression is much; and the other is, to sever, as much as may be, the construction of the injury from the point of contempt; imputing it to misunderstanding, fear, passion, or what you will.

Of Vicissitude Of Things

SOLOMON saith, There is no new thing upon the earth. So that as Plato had an imagination, That all knowledge was but remembrance; so Solomon giveth his sentence, That all novelty is but oblivion. Whereby you may see, that the river of Lethe runneth as well above ground as below. There is an abstruse astrologer that saith, If it were not for two things that are constant (the one is, that the fixed stars ever stand a like distance one from another, and never come nearer together, nor go further asunder; the other, that the diurnal motion perpetually keepeth time), no individual would last one moment. Certain it is, that the matter is in a perpetual flux, and never at a stay. The great winding-sheets, that bury all things in oblivion, are two; deluges and earthquakes. As for conflagrations and great droughts, they do not merely dispeople and destroy. Phaeton's car went but a day. And the three years' drought in the time of Elias, was but particular, and left people alive. As for the great burnings by lightnings, which are often in the West Indies, they are but narrow. But in the other two destructions, by deluge and earthquake, it is further to be noted, that the remnant of people which hap to be reserved, are commonly ignorant and mountainous people, that can give no account of the time past; so that the oblivion is all one, as if none had been left. If you consider well of the people of the West Indies, it is very probable that they are a newer or a younger people, than the people of the Old World. And it is much more likely, that the destruction that hath heretofore been there, was not by earthquakes (as the Egyptian priest told Solon concerning the island of Atlantis, that it was swallowed by an earthquake), but rather that it was desolated by a particular deluge. For earthquakes are seldom in those parts. But on the other side, they have such pouring rivers, as the rivers of Asia and Africk and Europe, are but brooks to them. Their Andes, likewise, or mountains, are far higher than those with us; whereby it seems, that the remnants of generation of men, were in such a particular deluge saved. As for the observation that Machiavel hath, that the jealousy of sects, doth much extinguish the memory of

things; traducing Gregory the Great, that he did what in him lay, to extinguish all heathen antiquities; I do not find that those zeals do any great effects, nor last long; as it appeared in the succession of Sabinian, who did revive the former antiquities.

The vicissitude of mutations in the superior globe, are no fit matter for this present argument. It may be, Plato's great year, if the world should last so long, would have some effect; not in renewing the state of like individuals (for that is the fume of those, that conceive the celestial bodies have more accurate influences upon these things below, than indeed they have), but in gross. Comets, out of question, have likewise power and effect, over the gross and mass of things; but they are rather gazed upon, and waited upon in their journey, than wisely observed in their effects; specially in, their respective effects; that is, what kind of comet, for magnitude, color, version of the beams, placing in the reign of heaven, or lasting, produceth what kind of effects.

There is a toy which I have heard, and I would not have it given over, but waited upon a little. They say it is observed in the Low Countries (I know not in what part) that every five and thirty years, the same kind and suit of years and weathers come about again; as great frosts, great wet, great droughts, warm winters, summers with little heat, and the like; and they call it the Prime. It is a thing I do the rather mention, because, computing backwards, I have found some concurrence.

But to leave these points of nature, and to come to men. The greatest vicissitude of things amongst men, is the vicissitude of sects and religions. For those orbs rule in men's minds most. The true religion is built upon the rock; the rest are tossed, upon the waves of time. To speak, therefore, of the causes of new sects; and to give some counsel concerning them, as far as the weakness of human judgment can give stay, to so great revolutions. When the religion formerly received, is rent by discords; and when the holiness of the professors of religion, is decayed and full of scandal; and withal the times be stupid, ignorant, and barbarous; you may doubt the springing up of a new sect; if then also, there should arise any extravagant and strange spirit, to make himself author thereof.

All which points held, when Mahomet published his law. If a new sect have not two properties, fear it not; for it will not spread. The one is the supplanting, or the opposing, of authority established; for nothing is more popular than that. The other is the giving license to pleasures, and a voluptuous life. For as for speculative heresies (such as were in ancient times the Arians, and now the Arminians), though they work mightily upon men's wits, yet they do not produce any great alterations in states; except it be by the help of civil occasions. There be three manner of plantations of new sects. By the power of signs and miracles; by the eloquence, and wisdom, of speech and persuasion; and by the sword. For martyrdoms, I reckon them amongst miracles; because they seem to exceed the strength of human nature: and I may do the like, of superlative and admirable holiness of life. Surely there is no better way, to stop the rising of new sects and schisms, than to reform abuses; to compound the smaller differences; to proceed mildly, and not with sanguinary persecutions; and rather to take off the principal authors by winning and advancing them, than to enrage them by violence and bitterness.

The changes and vicissitude in wars are many; but chiefly in three things; in the seats or stages of the war; in the weapons; and in the manner of the conduct. Wars, in ancient time, seemed more to move from east to west; for the Persians, Assyrians, Arabians, Tartars (which were the invaders) were all eastern people. It is true, the Gauls were western; but we read but of two incursions of theirs: the one to Gallo-Grecia, the other to Rome. But east and west have no certain points of heaven; and no more have the wars, either from the east or west, any certainty of observation. But north and south are fixed; and it hath seldom or never been seen that the far southern people have invaded the northern, but contrariwise. Whereby it is manifest that the northern tract of the world, is in nature the more martial region: be it in respect of the stars of that hemisphere; or of the great continents that are upon the north, whereas the south part, for aught that is known, is almost all sea; or (which is most apparent) of the cold of the northern parts, which is that which, without aid of discipline, doth make the bodies hardest, and the courages warmest.

Upon the breaking and shivering of a great state and empire, you may be sure to have wars. For great empires, while they stand, do enervate and destroy the forces of the natives which they have subdued, resting upon their own protecting forces; and then when they fail also, all goes to ruin, and they become a prey. So was it in the decay of the Roman empire; and likewise in the empire of Almaigne, after Charles the Great, every bird taking a feather; and were not unlike to befall to Spain, if it should break. The great accessions and unions of kingdoms, do likewise stir up wars; for when a state grows to an over-power, it is like a great flood, that will be sure to overflow. As it hath been seen in the states of Rome, Turkey, Spain, and others. Look when the world hath fewest barbarous peoples, but such as commonly will not marry or generate, except they know means to live (as it is almost everywhere at this day, except Tartary), there is no danger of inundations of people; but when there be great shoals of people, which go on to populate, without foreseeing means of life and sustentation, it is of necessity that once in an age or two, they discharge a portion of their people upon other nations; which the ancient northern people were wont to do by lot; casting lots what part should stay at home, and what should seek their fortunes. When a warlike state grows soft and effeminate, they may be sure of a war. For commonly such states are grown rich in the time of their degenerating; and so the prey inviteth, and their decay in valor, encourageth a war.

As for the weapons, it hardly falleth under rule and observation: yet we see even they, have returns and vicissitudes. For certain it is, that ordnance was known in the city of the Oxidrakes in India; and was that, which the Macedonians called thunder and lightning, and magic. And it is well known that the use of ordnance, hath been in China above two thousand years. The conditions of weapons, and their improvement, are; First, the fetching afar off; for that outruns the danger; as it is seen in ordnance and muskets. Secondly, the strength of the percussion; wherein likewise ordnance do exceed all arietations and ancient inventions. The third is, the commodious use of them; as that they may serve in all weathers; that the carriage may be light and manageable; and the like.

For the conduct of the war: at the first, men rested extremely upon number: they did put the wars likewise upon main force and valor; pointing days for pitched fields, and so trying it out upon an even match and they were more ignorant in ranging and arraying their battles. After, they grew to rest upon number rather competent, than vast; they grew to advantages of place, cunning diversions, and the like: and they grew more skilful in the ordering of their battles.

In the youth of a state, arms do flourish; in the middle age of a state, learning; and then both of them together for a time; in the declining age of a state, mechanical arts and merchandize. Learning hath his infancy, when it is but beginning and almost childish; then his youth, when it is luxuriant and juvenile; then his strength of years, when it is solid and reduced; and lastly, his old age, when it waxeth dry and exhaust. But it is not good to look too long upon these turning wheels of vicissitude, lest we become giddy. As for the philology of them, that is but a circle of tales, and therefore not fit for this writing.

Of Fame

THE poets make Fame a monster. They describe her in part finely and elegantly, and in part gravely and sententiously. They say, look how many feathers she hath, so many eyes she hath underneath; so many tongues; so many voices; she pricks up so many ears.

This is a flourish. There follow excellent parables; as that, she gathereth strength in going; that she goeth upon the ground, and yet hideth her head in the clouds; that in the daytime she sitteth in a watch tower, and flieth most by night; that she mingleth things done, with things not done; and that she is a terror to great cities. But that which passeth all the rest is: They do recount that the Earth, mother of the giants that made war against Jupiter, and were by him destroyed, thereupon in an anger brought forth Fame. For certain it is, that rebels, figured by the giants, and seditious fames and libels, are but brothers and sisters, masculine and feminine. But now, if a man can tame this monster, and bring her to feed at the hand, and govern her, and with her fly other ravening fowl and kill them, it is somewhat worth. But we are infected with the style of the poets. To speak now in a sad and serious manner: There is not, in all the politics, a place less handled and more worthy to be handled, than this of fame. We will therefore speak of these points: What are false fames; and what are true fames; and how they may be best discerned; how fames may be sown, and raised; how they may be spread, and multiplied; and how they may be checked, and laid dead. And other things concerning the nature of fame. Fame is of that force, as there is scarcely any great action, wherein it hath not a great part; especially in the war. Mucianus undid Vitellius, by a fame that he scattered, that Vitellius had in purpose to remove the legions of Syria into Germany, and the legions of Germany into Syria; whereupon the legions of Syria were infinitely inflamed. Julius Caesar took Pompey unprovided, and laid asleep his industry and preparations, by a fame that he cunningly gave out: Caesar’s own soldiers loved him not, and being wearied with the wars, and laden with the spoils of Gaul,

would forsake him, as soon as he came into Italy. Livia settled all things for the succession of her son Tiberius, by continual giving out, that her husband Augustus was upon recovery and amendment, and it is an usual thing with the pashas, to conceal the death of the Great Turk from the janizaries and men of war, to save the sacking of Constantinople and other towns, as their manner is. Themistocles made Xerxes, king of Persia, post apace out of Grecia, by giving out, that the Grecians had a purpose to break his bridge of ships, which he had made athwart Hellespont. There be a thousand such like examples; and the more they are, the less they need to be repeated; because a man meeteth with them everywhere. Therefore let all wise governors have as great a watch and care over fames, as they have of the actions and designs themselves.

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A Glossary of Archaic Words and Phrases

Abridgment: miniature Absurd: stupid, unpolished Abuse: cheat, deceive Aculeate: stinging Adamant: loadstone Adust: scorched
Advoutress: adulteress Affect: like, desire Antic: clown
Appose: question Arietation: battering-ram Audit: revenue
Avoidance: secret outlet Battle: battalion Bestow: settle in life Blanch: flatter, evade Brave: boastful
Bravery: boast, ostentation Broke: deal in brokerage Broken: shine by comparison Broken music: part music Cabinet: secret
Calendar: weather forecast Card: chart, map Care not to: are reckless Cast: plan
Cat: cate, cake
Charge and adventure: cost and risk
Check with: interfere Chop: bandy words Civil: peaceful
Close: secret, secretive Collect: infer
Compound: compromise Consent: agreement Curious: elaborate Custom: import duties Deceive: rob
Derive: divert
Difficileness: moroseness Discover: reveal Donative: money gift Doubt: fear
Equipollent: equally powerful Espial: spy
Estate: state
Facility: of easy persuasion Fair: rather
Fame: rumor
Favor: feature
Flashy: insipid
Foot-pace: lobby Foreseen: guarded against Froward: stubborn Futile: babbling Globe: complete body Glorious: showy, boastful Humorous: capricious Hundred poll: hundredth head Impertinent: irrelevant Implicit: entangled In a mean: in moderation In smother: suppressed Indifferent: impartial Intend: attend to Knap: knoll

Leese: lose
Let: hinder
Loose: shot
Lot: spell
Lurch: intercept Make: profit, get Manage: train
Mate: conquer
Material: business-like Mere-stone: boundary stone Muniting: fortifying Nerve: sinew
Obnoxious: subservient, liable Oes: round spangles Pair: impair
Pardon: allowance Passable: mediocre Pine-apple-tree: pine Plantation: colony Platform: plan
Plausible: praiseworthy Point device: excessively precise Politic: politician Poll: extort
Poser: examiner
Practice: plotting Preoccupate: anticipate Prest: prepared
Prick: plant
Proper: personal Prospective: stereoscope Proyne: prune
Purprise: enclosure Push: pimple
Quarrel: pretext Quech: flinch
Reason: principle Recamera: retiring-room Return: reaction Return: wing running back Rise: dignity
Round: straight
Save: account for Scantling: measure Seel: blind
Shrewd: mischievous Sort: associate
Spial: spy
Staddle: sapling Steal: do secretly Stirp: family
Stond: stop, stand Stoved: hot-housed Style: title
Success: outcome Sumptuary law: law against extravagance
Superior globe: the heavens Temper: proportion Tendering: nursing Tract: line, trait Travel: travail, labor Treaties: treatises Trench to: touch Trivial: common

Turquet: Turkish dwarf Under foot: below value Unready: untrained Usury: interest
Value: certify
Virtuous: able
Votary: vowed
Wanton: spoiled
Wood: maze
Work: manage, utilize

The Colours of Good and Evil

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Francis Bacon by an unknown artist, 1618

TO THE LORD MOUNTJOYE.

I send you the last part of the best book of Aristotle of Stagira, who, as your lordship knoweth, goeth for the best author. But saving the civil respect which is due to a received estimation, the man being a Grecian, and of a hasty wit, having hardly a discerning patience, much less a teaching patience, hath so delivered the matter, as I am glad to do the part of a good house-hen, which with out any strangeness will sit upon pheasants eggs. And yet perchance some that shall compare my lines with Aristotle's lines, will muse by what art, or rather by what revelation, I could draw these conceits out of that place. But I, that should know best, do freely acknowledge, that I had my light from him; for where he gave me not matter to perfect, at the least he gave me occasion to invent. Wherein as I do him right, being myself a man that am as free from envying the dead in contemplation, as from envying the living in action or fortune: so yet nevertheless still I say, and I speak it more largely than before, that in perusing the writings of this person so much celebrated, whether it were the impediment of his wit, or that he did it upon glory and affectation to be subtile, as one that if he had seen his own conceits clearly and perspicuously delivered, perhaps would have been out of love with them himself; or else upon policy, to keep himself close, as one that had been a challenger of all the world, and had raised infinite contradiction: to what cause soever it is to be ascribed, I do not find him to deliver and unwrap himself well of that he seemeth to conceive; nor to be a master of his own knowledge. Neither do I for my part also, though I have brought in a new manner of handling this argument, to make it pleasant and lightsome, pretend so to have overcome the nature of the subject, but that the full understanding and use of it will be somewhat dark, and best pleasing the taste of such wits as are patient to. stay the digesting and soluling unto themselves of that which is sharp and subtile. Which was the cause, joined with the love and honour which I bear to your lordship, as the person I know to have many virtues, and an excellent order of them, which moved me to dedicate this writing to your

lordship after the ancient manner: choosing both a friend, and one to whom I conceived the argument was agreeable.

OF THE COLOURS OF GOOD AND EVIL.

In deliberatives the point is, what is good, and what is evil, and of good what is greater, and of evil what is less.

So that the persuader's labour is to make things appear good or evil, and that in higher or lower degree, which as it may be performed by true and solid reasons, so it may be represented also by colours, popularities and circumstances, which are of such force, as they sway the ordinary judgment either of a weak man, or of a wise man not fully and considerately attending and pondering the matter. Besides their power to alter the nature of the subject in appearance, and so to lead to error, they are of no less use to quicken and strenghten the opinions and persuasions which are true: for reasons plainly delivered, and always after one manner, especially with fine and fastidious minds, enter but heavily and dully: whereas if they be varied and have more life and vigour put into them by these forms and insinuations, they cause a stronger apprehension, and many times suddenly win the mind to a resolution. Lastly, to make a true and safe judgment, nothing can be of greater use and defence to the mind, than the discovering and reprehension of these Colours, showing in what cases they hold, and in what they deceive: which as it cannot he done, but out of a very universal knowledge of the nature of things, so being performed, it so cleareth man's judgment and election, as it is the less apt to slide into any error.

A Table of the Colours or Appearances of Good and Evil, and their degrees, as places of persuasion and dissuasion, and their several fallacies and the elenches of them.

I.

“Cui cateræ partes vel sectæ secundas unanimiter deferunt, cum singulæ principatum sibi vindicent, melior reliquis videtur. Nam primas quæque ex zelo videtur sumere, secundas autem ex vero et merito tribuere.”

So Cicero went about to prove the sect of Academics, which suspended all asseveration, for to be the best: for, saith he, ask a Stoic which philosophy is true, he will prefer his own. Then ask him which approacheth next the truth, he will confess the Academics. So deal with the Epicure, that will scant endure the Stoic to be in sight of him, so soon as he hath placed himself, he will place the Academics next him.

So if a prince took divers competitors to a place, and examined them severally, whom next themselves they would rarest commend, it were like the ablest man should have the most second voices.

The fallax of this colour happeneth oft in respect of envy, for men are accustomed after themselves and their own faction, to incline unto them which are softest, and are least in their way, in despite and derogation of them, that hold them hardest to it. So that this colour of meliority and pre-eminence is a sign of enervation and weakness.

II.

“Cujus excellentia vel exsuperantia melior, id toto genere melias.”

Appertaining to this are the forms: “Let us not wander in generalities: Let us compare particular with particular,” &c. This appearance, though it seem of strength, and rather logical than rhetorical yet is very oft a fallax.

Sometime because some things are in kind very casual, which if they escape, prove excellent, so that the kind is inferior, because it is so subject to peril, but that which is excellent being proved is superior, as the blossom of March and the blossom of May, whereof the French verse goeth:

“Burgeon de Mars, enfans de Paris,
Si un eschape, il en vaut dix.”

So that the blossom of May is generally better than the blossom of March, and yet the best blossom of March is better than the best blossom of May. Sometimes because the nature of some kinds is to be more equal, and more indifferent, and not to have very distant degrees, as hath been noted in the warmer climates, the people are generally more wise, but in the northern climates the wits of chief are greater. So in many armies, if the matter should be tried by duel between two champions, the victory should go on the one side, and yet if it be tried by the gross, it would go on the other side; for excellencies go as it were by chance, but kinds go by a more certain nature, as by discipline in war.

Lastly many kinds have much refuse, which countervail that which they have excellent, and therefore generally metal is more precious than stone; and yet a diamond is more precious than gold.

III.

“Quod ad veritatem refertur majus est quam quod ad opinionem. Modus autem et probatio ejus quod ad opinionem pertinet hæc est, quod quis si clam putaret fore facturus non esset.”

So the Epicures say of the Stoics felicity placed in virtue; that it is like the felicity of a player, who if he were left of his auditory and their applause, he would straight be out of heart and countenance, and therefore they call virtue “bonum theatrale.” But of riches the poet saith; “Populus me sibilat,
At mihi plaudo.”

And of pleasure,

“Grata sub imo
Gaudia corde premens, vultu simulante pudorem.”

The fallax of this colour is somewhat subtile, though the answer to the example be ready, for virtue is not chosen “propter auram popularem.” But contrariwise, “maxime omnium teipsum reverere,” so as a virtuous man will be virtuous in “solitudine,” and not only in “theatro,” though percase it will be more strong by glory and fame, as an heat which is doubled by reflection; but that denieth the supposition, it doth not reprehend the fallax, whereof the reprehension is: Allow that virtue, (such as is joined with labour and conflict,) would not be chosen but for fame and opinion, yet it followeth not, that the chief motive of the election should not be real and for itself, for fame may be only “causa impulsiva,” and not “causa constituens, or efficiens.” As if there were two horses, and the one would do better without the spur than the other: but again, the other with the spur would far exceed the doing of the former, giving him the spur also: yet the latter will be judged to be the better horse. And the form as to say, “Tush, the life of this horse is but in the spur,” will not serve as to a wise judgment; for since the ordinary instrument of horsemanship is the spur,

and that it is no manner of impediment, nor burden, the horse is not to be accounted the less of, which will not do well without the spur, but rather the other is to be reckoned a delicacy, than a virtue: so glory and honour are the spurs to virtue: and although virtue would languish without them, yet since they be always at hand to attend virtue, virtue is not to be said the less chosen for itself, because it needeth the spur of fame and reputation: and therefore that position, “nota ejus rei quod propter opinionem et non propter veritatem eligitur, hæc est; quod quis si, clam putaret fore, tacturus non esset,” is reprehended.

IV.

“Quod rem integram servat bonum, quod sine receptu est malum. Nam se recipere non pose impotentiæ autem bonum.”

Hereof Æsop framed the fable of the two frogs that consulted together in the time of drought, when many plashes that they had repaired to were dry, what was to be done, and the one propounded to go down into a deep well, because it was like the water would not fail there; but the other answered, yea, but if it do fail, how shall we get up again. And the reason is, that human actions are so uncertain and subject to perils, as that seemeth the best course which hath most passages out of it. Appertaining to this persuasion, the forms are, you shall engage yourself, on the other side, “tantum, quantum voles, sumes ex fortuna,” &c. you shall keep the matter in your own hand. The reprehension of it is, that proceeding and resolving in all actions is necessary. For as be saith well, not to resolve, is to resolve, and many times it breeds as many necessities, and engageth as far in some other sort, as to resolve. So it is but the covetous man’s disease, translated into power; for the covetous man will enjoy nothing, because he will have his full store and possibility to enjoy the more; so by this reason, a man should execute nothing, because he should be still indifferent, and at liberty to execute any thing. Besides necessity and this same “jacta est alea,” hath many times an advantage, because it awaketh the powers of the mind, and strengtheneth endeavour, “cæteris paret necessitate certe superiores istis.”

V.

“Quod ex pluribus constat et divisibilibus, est majus quam quod ex paucioribus et magis unum; nam omnia per partes considerata majora videntur, quare et pluralitas partium magnitudinem præ se fert: fortius autem operatur pluralitas partium, si ordo absit, nam inducit similitudinem infiniti, et impedit comprehensionem.”

This colour seemeth palpable, for it is not plurality of parts, without majority of parts, that maketh the total greater, yet nevertheless, it often carries the mind away, yea, it deceiveth the sense; as it seemeth to the eye a shorter distance of way, if it be all dead, and continued, than if it have trees or buildings, or any other marks, whereby the eye may divide it. So when a great moneyed man hath divided his chests, and coins, and bags, he seemeth to himself richer than he was, and therefore a way to amplify any thing is, to break it and to make anatomy of it in several parts, and to examine it according to several circumstances. And this maketh the greater show if it be done without order, for confusion maketh things muster more; and besides, what is set down by order and division, doth demonstrate that nothing is left out or omitted, but all is there; whereas if it be without order, both the mind comprehendeth less that which is set down; and besides, it leaveth a suspicion, as if more might be said than is expressed.

This colour deceiveth, if the mind of him that is to be persuaded, do of itself over-conceive, or prejudge of the greatness of any thing; for then the breaking of it will make it seem less, because it maketh it to appear more according to the truth: and therefore if a man be in sickness or pain, the time will seem longer without a clock or hourglass, than with it; for the mind doth value every moment, and then the hour doth rather sum up the moments than divide the day. So in a dead plain the way seemeth longer, because the eye hath preconceived it shorter than the truth, and the frustrating of that maketh it seem longer than the truth. Therefore if any man have an over-great opinion of any thing, then if another think by breaking it into several considerations he shall make it seem

greater to him, he will be deceived; and therefore in such cases it is not safe to divide, but to extol the entire, still in general. Another case wherein this colour deceiveth is, when the matter broken or divided is not comprehended by the sense or mind at once, in respect of the distracting or scattering of it; and being entire and not divided, is comprehended; as an hundred pounds in heaps of five pounds will show more than in one gross heap, so as the heaps be all upon one table to be seen at once, otherwise not; as flowers growing scattered in divers beds will show more than if they did grow in one bed, so as all those beds be within a plot, that they be objects to view at once, otherwise not: and therefore men, whose living lieth together in one shire, are commonly counted greater landed than those whose livings are dispersed, though it be more, because of the notice and comprehension. A third case wherein this colour deceiveth, and it is not so properly a case of reprehension, as it is a counter colour, being in effect as large as the colour itself; and that is "omnis compositio indigentiæ cujusdam videtur esse particeps," because if one thing would serve the turn, it were ever best, but the defect and perfections of things hath brought in that help to piece them up; as it is said, "Martha, Martha, attendis ad plurima, unum sufficit." So likewise hereupon Æsop framed the fable of the fox and the cat; whereas the fox bragged what a number of shifts and devices he had to get from the hounds, and the cat said she had but one, which was to climb a tree, which in proof was better worth than all the rest; whereof the proverb grew, "Multa novit vulpes, sed felis unum magnum." And in the moral of this fable it comes likewise to pass, that a good sure friend is a better help at a pinch than all the stratagems and policies of a man's own wit. So it falleth out to be a common error in negotiating, whereas men have many reasons to induce or persuade, they strive commonly to utter and use them all at once, which weakeneth them. For it argueth, as was said, a neediness in every of the reasons, by itself, as if one did not trust to any of them, but fled from one to another, helping himself only with that: "Et quæ non prosunt singula, multa juvant." Indeed in a set speech in an assembly, it is expected a man should use all his reasons in the case he handleth, but in private persuasions it is always a great error. A fourth case wherein this colour may be

reprehended, is in respect of that same “vis unita fortior,” according to the tale of the French king, that when the emperor’s ambassador had recited his master’s style at large, which consisteth of many countries and dominions; the French king willed his chancellor, or other minister, to repeat and say over France as many times as the other had recited the several dominions; intending it was equivalent with them all, and besides more compacted and united. There is also appertaining to this colour another point, why breaking of a thing doth help it, not by way of adding a show of magnitude unto it, but a note of excellency and rarity; whereof the forms are, Where shall you find such a concurrence; Great but not complete; for it seems a less work of nature or fortune, to make any thing in his kind greater than ordinary, than to make a strange composition. Yet if it be narrowly considered, this colour will be reprehended or encountered, by imputing to all excellencies in compositions a kind of poverty, or at least a casualty or jeopardy; for from that which is excellent in greatness, somewhat may be taken, or there may be decay, and yet sufficiency left; but from that which hath his price in composition, if you take away any thing, or any part do fail, all is disgrace.

VI.

“Cujus privatio bona, malum; cujus privatio mala, bonum.”

The forms to make it conceived, that that was evil which is changed for the better, are, He that is in hell thinks there is no other heaven. “Satis quercus.” Acorns were good till bread was found, &c. And of the other side, the forms to make it conceived, that that was good which was changed for the worse, are, “Bona magis carendo quam fruendo sentimus: Bona a tergo formosissima;” Good things never appear in their full beauty, till they turn their back and be going away, &c.

The reprehension of this colour is, that the good or evil which is removed may be esteemed good or evil comparatively, and not positively or simply. So that if the privation be good, it follows not the former condition was evil, but less good; for the flower or blossom is a positive good, although the remove of it to give place to the fruit, be a comparative good. So in the tale of *Æ*sop, when the old fainting man in the heat of the day cast down his burden and called for Death; and when Death came to know his will with him, said, it was for nothing but to help him up with his burden again: it doth not follow, that because Death, which was the privation of the burden, was ill, therefore the burden was good. And in this part, the ordinary form of “malum necessarium” aptly reprehendeth this colour, for “privatio mali necessarii est mala,” and yet that doth not convert the nature of the necessary evil, but it is evil.

Again it cometh sometimes to pass, that there is an equality in the change of privation, and as it were a “dilemma boni,” or a “dilemma mali:” so that the corruption of the one good, is a generation of the other. “Sorti pater æquus utrique est:” and contrary, the remedy of the one evil is the occasion and commencement of another, as in Scylla and Charybdis.

VII.

“Quod bono vicinum, bonum; quod a bono remotum, malum.”

Such is the nature of things, that things contrary, and distant in nature and quality, are also severed and disjoined in place; and things like and consenting in quality, are placed, and as it were quartered together: for, partly in regard of the nature to spread, multiply, and infect in similitude; and partly in regard of the nature to break, expel, and alter that which is disagreeable and contrary, most things do either associate, and draw near to themselves the like, or at least assimilate to themselves that which approacheth near them, and do also drive away, chase and exterminate their contraries. And that is the reason commonly yielded, why the middle region of the air should be coldest, because the sun and stars are either hot by direct beams, or by reflection. The direct beams heat the upper region, the reflected beams from the earth and seas heat the lower region. That which is in the midst, being farthest distant in place from these two regions of heat, are most distant in nature, that is, coldest; which is that they term cold or hot “per antiperistasin,” that is, environing by contraries: which was pleasantly taken hold of by him that said, that an honest man, in these days, must needs be more honest than in ages heretofore, “propter antiperistasin,” because the shutting of him in the midst of contraries, must needs make the honesty stronger and more compact in itself.

The reprehension of this colour is: first, many things of amplitude in their kind do as it were ingross to themselves all, and leave that which is next them most destitute: as the shoots or underwood, that grow near a great and spread tree, is the most pined and shrubby wood of the field, because the great tree doth deprive and deceive them of sap and nourishment; so he saith well, “divitus servi maxime servi;” and the comparison was pleasant of him, that compared courtiers attendant in the courts of princes without great place or office, to fasting-days, which were next the holydays, but otherwise were the leanest days in all the week.

Another reprehension is, that things of greatness and predominancy, though they do not extenuate the things adjoining in substance, yet they drown them and obscure them in show and appearance; and therefore the astronomers say, That whereas in all other planets conjunction is the perfectest amity; the sun contrariwise is good by aspect, but evil by conjunction.

A third reprehension is, because evil approacheth to good sometimes for concealment, sometimes for protection; and good to evil for conversion and reformation. So hypocrisy draweth near to religion for coverts and hiding itself; “sæpe latet vitium proximitate boni:” and sanctuary-men, which were commonly inordinate men and malefactors, were wont to be nearest to priests and prelates, and holy men; for the majesty of good things is such, as the confines of them are revered. On the other side, our Saviour, charged with nearness of publicans and rioters, said, “The physician approacheth the sick rather than the whole.”

VIII.

“Quod quis culpa sua contraxit, majus malum, quod ab externis imponitur, minus malum.”

The reason is, because the sting and remorse of the mind accusing itself doubleth all adversity: contrariwise, the considering and recording inwardly, that a man is clear and free from fault and just imputation, doth attempter outward calamities. For if the evil be in the sense, and in the conscience both, there is a gemination of it; but if evil be in the one, and comfort in the other, it is a kind of compensation: so the poets in tragedies do make the most passionate lamentations, and those that forerun final despair, to be accusing, questioning, and torturing of a man’s self.

“Seque unum clamat causamque caputque malorum.”

And contrariwise, the extremities of worthy persons have been annihilated in the consideration of their own good deserving. Besides, when the evil cometh from without, there is left a kind of evaporation of grief, if it come by human injury, either by indignation, and meditating of revenge from ourselves, or by expecting or foreconceiving that Nemesis and retribution will take hold of the authors of our hurt: or if it be by fortune or accident, yet there is left a kind of expostulation against the divine powers;

“Atque deos atque astra vocat crudelia mater.”

But where the evil is derived from a man’s own fault, there all strikes deadly inwards and suffocateth.

The reprehension of this colour is, first in respect of hope, for reformation of our faults is “in nostra potestate;” but amendment of our fortune simply is not. Therefore, Demosthenes, in many of his orations, saith thus to the people of Athens: “That which having regard to the time past is the worst point and circumstance of all the rest; that as to the time to come is the best: what is that? Even this, that by your sloth, irresolution, and misgovernment, your affairs are grown to this declination and decay. For had you used and ordered your means

and forces to the best, and done your parts every way to the full, and, notwithstanding, your matters should have gone backward in this manner, as they do, there had been no hope left of recovery or reparation; but since it hath been only by your own errors," &c. So Epictetus in his degrees saith, "The worst state of man is to accuse external things, better than that to accuse a man's self, and best of all to accuse neither."

Another reprehension of this colour is, in respect of the well-bearing of evils wherewith a man can charge nobody but himself, which maketh them the less

"Leve fit quod bene fertur onus."

And therefore many natures that are either extremely proud, and will take no fault to themselves, or else very true and cleaving to themselves, when they see the blame of any thing that falls out ill must light upon themselves, have no other shift but to bear it out well, and to make the least of it; for as we see when sometimes a fault is committed, and before it be known who is to blame, much ado is made of it; but after, if it appear to be done by a son, or by a wife, or by a near friend, then it is light made of: so much more when a man must take it upon himself. And therefore it is commonly seen, that women that marry husbands of their own choosing against their friends' consents, if they be never so ill used, yet you shall seldom see them complain, but set a good face on it.

IX.

Quod opera et virtute nostra partum est, majus bonum; quod ab alieno beneficio vel ab indulgentia fortunæ delatum, est minus bonum."

The reasons are, first, the future hope, because in the favours of others, or the good winds of fortune, we have no state or certainty; in our endeavours or abilities we have. So as when they have purchased us one good fortune, we have them as ready, and better edged, and inured to procure another.

The forms be: you have won this by play, you have not only the water, but you have the receipt, you can make it again if it be lost, &c.

Next, because these properties which we enjoy by the benefit of others, carry with them an obligation, which seemeth a kind of burden; whereas the other, which derive from ourselves, are like the freest parents, "absque aliquo inde reddendo:" and if they proceed from fortune or providence, yet they seem to touch us secretly with the reverence of the divine powers, whose favours we taste, and therefore work a kind of religious fear and restraint: whereas in the other kind, that comes to pass which the prophet speaketh, "lætantur et exultant, immolant plagis suis, et sacrificant reti suo."

Thirdly, because that which cometh unto us without our own virtue, yieldeth not that commendation and reputation: for actions of great felicity may draw wonder, but praise less; as Cicero said to Cæsar, "Quæ miremur, habemus; quæ laudemus, expectamus."

Fourthly, because the purchases of our own industry are joined commonly with labour and strife, which gives an edge and appetite, and makes the fruition of our desires more pleasant. "Suavis cibus a venatu."

On the other side, there be four countercolours to this colour, rather than reprehensions, because they be as large as the colour itself. First, because felicity seemeth to be a character of the favour and love of the divine powers, and accordingly worketh both confidence in ourselves, and respect and authority from others. And this felicity extendeth to many casual things, whereunto the

care or virtue of man cannot extend, and therefore seemeth to be a larger good; as when Cæsar said to the sailor, “Cæsarem portas et fortunam ejus;” if he had said, “et virtutem ejus,” it had been small comfort against a tempest, otherwise than if it might seem upon merit to induce fortune.

Next, whatsoever is done by virtue and industry, seems to be done by a kind of habit and art, and therefore open to be imitated and followed; where as felicity is inimitable: so we generally see that things of nature seem more excellent than things of art, because they be inimitable; for “quod imitabile est, potentia quadam vulgatum est.”

Thirdly, felicity commendeth those things which come without our labour; for they seem gifts, and the other seem pennyworths; where upon Plutarch saith elegantly of the acts of Timoleon, who was so fortunate, compared with the acts of Agesilaus and Epaminondas; that they were like Homer’s verses, they ran so easily and so well. And therefore it is the word we give unto poesy, terming it a happy vein, because facility seemeth ever to come from happiness.

Fourthly, this same “præter spem, vel præter expectatum,” doth increase the price and pleasure of many things: and this cannot be incident to those things that proceed from our own care and compass.

X.

“Gradus privationis major videtur, quam gradus diminutionis; et rursus gradus inceptionia major videtur, quam gradus incrementii.”

It is a position in the mathematics, that there is no proportion between something and nothing, therefore the degree of nullity and quiddity or act, seemeth larger than the degree of increase and decrease; as to a “monoculus” it is more to lose one eye than to a man that hath two eyes. So if one have lost divers children, it is more grief to him to lose the last than all the rest; because he is “spes gregis.” And therefore Sibylla, when she brought her three books, and had burned two, did double the whole price of both the other, because the burning of that had been “gradus privationis,” and not “diminutionis.”

This colour is reprehended first in those things, the use and service whereof resteth in sufficiency, competency, or determinate quantity: as if a man be to pay one hundred pounds upon a penalty, it is more to him to want twelve pence, than after that twelve pence supposed to be wanting, to want ten shillings more; so the decay of a man’s estate seems to be most touched in the degree, when he first grows behind, more than afterwards, when he proves nothing worth. And hereof the common forms are, “Sera in fundo parsimonia,” and, as good never a whit, as never the better, &c. It is reprehended also in respect of that notion, “Corruptio unius, generatio alterius:” so that “gradus privationis” is many times less matter, because it gives the cause and motive to some new course. As when Demosthenes reprehended the people for hearkening to the conditions offered by King Philip, being not honourable nor equal, he saith they were but aliments of their sloth and weakness, which if they were taken away, necessity would teach them stronger resolutions. So Doctor Hector was wont to say to the dames of London, when they complained they were they could not tell now, but yet they could not endure to take any medicine; he would tell them their way was only to be sick, for then they would be glad to take any medicine.

Thirdly, this colour may be reprehended, in respect that the degree of decrease is more sensitive than the degree of privation; for in the mind of man "gradus diminutionis" may work a wavering between hope and fear, and so keep the mind in suspense, from settling and accommodating in patience and resolution. Hereof the common forms are, better eye out than always ache; make or mar, &c.

For the second branch of this colour, it depends upon the same general reason: hence grew the common-place of extolling the beginning of everything: "dimidium facti qui bene cœpit habet." This made the astrologers so idle as to judge of a man's nature and destiny, by the constellation of the moment of his nativity or conception. This colour is reprehended, because many inceptions are but, as Epicurus termeth them, "tentamenta," that is, imperfect offers and essays, which vanish and come to no substance without, an iteration; so as in such cases the second degree seems the worthiest, as the body-horse in the cart that draweth more than the fore-horse. Hereof the common forms are, the second blow makes the fray, the second word makes the bargain: "Alter principium dedit, alter modum abstulit," &o. Another reprehension of this colour is in respect of defatigation, which makes perseverance of greater dignity than inception: for chance or instinct of nature may cause inception: but settled affection or judgment maketh the continuance.

Thirdly, this colour is reprehended in such things, which have a natural course and inclination contrary to an inception. So that the inception is continually evacuated and gets no start: but there behoveth "perpetua inceptio," as in the common form, "Non progredi est regredi, qui non proficit deficit:" running against the hill, rowing against the stream, &c. For if it be with the stream or with the hill, then the degree of inception is more than all the rest.

Fourthly, this colour is to be understood of "gradus inceptionis a potentia ad actum, comparatus cum gradu ab actu ad incrementum." For otherwise "majur videtur gradus ab impotentia ad potentiam, quam a potentia ad actum."

Meditationes Sacrae

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OF THE WORKS OF GOD AND MAN.

God beheld all things which his hands had made, and lo they were all passing good. But when man turned him about, and took a view of the works which his hands had made, he found all to be vanity and vexation of spirit: wherefore, if thou shalt work in the works of God, thy sweat shall be as an ointment of odours, and thy rest as the sabbath of God: thou shalt travail in the sweat of a good conscience, and shalt keep holy day in the quietness and liberty of the sweetest contemplations; but if thou shalt aspire after the glorious acts of men, thy working shall be accompanied with compunction and strife, and thy remembrance followed with distaste and upbraidings; and justly doth it come to pass towards thee, O man, that since thou, which art God's work, doest him no reason in yielding him well-pleasing service, even thine own works also should reward thee with the like fruit of bitterness.

OF THE MIRACLES OF OUR SAVIOUR.

“He hath done all things well.”

A true confession and applause. God when he created all things saw that every thing in particular and all things in general were exceeding good; God, the Word, in the miracles which he wrought, (now every miracle is a new creation, and not according to the first creation,) would do nothing which breathed not towards men favour and bounty: Moses wrought miracles, and scourged the Egyptians with many plagues: Elias wrought miracles, and shut up heaven, that no rain should fall upon the earth; and again brought down from heaven the fire of God upon the captains and their bands: Elizeus wrought also, and called bears out of the desert to devour young children: Peter struck Ananias, the sacrilegious hypocrite, with present death; and Paul, Elymas, the sorcerer, with blindness; but no such thing did Jesus, the Spirit of God descended down upon him in the form of a dove, of whom he said, “You know not of what spirit you are.” The spirit of Jesus is the spirit of a dove; those servants of God were as the oxen of God treading out the corn, and trampling the straw down under their feet; but Jesus is the Lamb of God, without wrath or judgments; all his miracles were consummate about man’s body, as his doctrine respected the soul of man: the body of man needeth these things; sustenance, defence from out ward wrongs, and medicine; it was he that drew a multitude of fishes into the nets, that he might five unto men more liberal provision: He turned water, a less worthy nourishment of man’s body, into wine, a more worthy, that glads the heart of man: He sentenced the fig-tree to wither for not doing that duty whereunto it was ordained, which is, to bear fruit for men’s food: He multiplied the scarcity of a few loaves and fishes to a sufficiency to victual an host of people: He rebuked the winds that threatened destruction to the seafaring men: He restored motion to the lame, light to the blind, speech to the dumb, health to the sick, cleanness to the leprous, a right mind to those that were possessed, and life to the dead. No miracle of his is to be found to have been of judgment or revenge, but all of

goodness and mercy, and respecting man's body; for as touching riches he did not vouchsafe to do any miracle, save one only, that tribute might be given to Cæsar.

OF THE INNOCENCY OF THE DOVE, AND THE WISDOM OF THE SERPENT.

“The fool receiveth not the word of wisdom, except thou discover to him what he hath in his heart.”

To a man of a perverse and corrupt judgment all instruction or persuasion is fruitless and contemptible, which begins not with discovery and laying open of the distemper and ill complexion of the mind which is to be recured, as a plaster is unseasonably applied before the wound be searched; for men of corrupt understanding, that have lost all sound discerning of good and evil, come possest with this prejudicate opinion, that they think all honesty and goodness proceedeth out of a simplicity of manners, and a kind of want of experience and unacquaintance with the affairs of the world. Therefore, except they may perceive that those things which are in their hearts, that is to say, their own corrupt principles, and the deepest reaches of their cunning and rottenness to be thoroughly sounded, and known to him that goes about to persuade with them, they make bin a play of the words of wisdom. Therefore it behoveth him which aspireth to a goodness (not retired or particular to himself, but a fructifying and begetting goodness which should draw on others) to know those points, which be called in the Revelation the deeps of Satan, that he may speak with authority and true insinuation. Hence is the precept, “Try all things, and hold that which is good;” which endureth a discerning election out of an examination whence nothing at all is excluded out of the same fountain ariseth that direction, “Be you wise as serpents and innocent as doves.” There are neither teeth nor stings, nor venom, nor wreaths and folds of serpents, which ought not to be all known, and, as far as examination doth lead, tried: neither let any man here fear infection or pollution, for the sun entereth into sinks and is not defiled; neither let any man think that herein he tempteth God, fur his diligence and generality of examination is commanded, and God is sufficient to preserve you immaculate and pure.

OF THE EXALTATION OF CHARITY.

“If I have rejoiced at the overthrow of him that hated me, or took pleasure when adversity did befall him.”

The detestation or renouncing of Job. For a man to love again where he is loved, it is the charity of publicans contracted by mutual profit and good offices; but to love a man’s enemies is one of the cunningest points of the law of Christ, and an imitation of the divine nature. But yet again, of this charity there be divers degrees; whereof the first is, to pardon our enemies when they repent: of which charity there is a shadow and image, even in noble beasts; for of lions, it is a received opinion that their fury and fierceness ceaseth towards any thing that yieldeth and prostrateth itself. The second degree is, to pardon our enemies, though they persist, and without satisfactions and submissions. The third degree is, not only to pardon and forgive, and forbear our enemies, but to deserve well of them, and to do them good: but all these three degrees either have or may have in them a certain bravery and greatness of the mind rather than pure charity; for when a man perceiveth virtue to proceed and flow from himself, it is possible that he is puffed up and takes contentment rather in the fruit of his own virtue than in the good of his neighbours; but if any evil overtake the enemy from any other coast than from thyself, and thou in the inwardest motions of thy heart be grieved and compassionate, and dost noways insult, as if thy days of right and revenge were at the last come; this I interpret to be the height and exaltation of charity.

OF THE MODERATION OF CARES.

“Sufficient for the day is the evil thereof.”

There ought to be a measure in worldly cares, otherwise they are both unprofitable, as those which oppress the mind and astonish the judgment, and profane, as those which savour of a mind which promiseth to itself a certain perpetuity in the things of this world; for we ought to be day’s men and not to-morrow’s men. considering the shortness of our time; and as he saith, “Laying hold on the present day;” for future things shall in heir turns become presents, therefore the care of the present sufficeth: and yet moderate cares (whether they concern our particular, or the commonwealth, or our friends) are not blamed. But herein is a two fold excess; the one when the chain or thread of our cares, extended and spun out to an over great length, and unto times too far off, as if we could bind the divine providence by our provisions, which even with the heathen, was always found to be a thing insolent and unlucky; for those which did attribute much to fortune, and were ready at hand to apprehend with alacrity the present occasions, have for the most part in their actions been happy; but they who in a compass, wisdom, have entered into a confidence that they had belayed all events, have for the most part en countered misfortune. The second excess is, when we dwell longer in our cares than is requisite for due deliberating or firm resolving; for who is there amongst us that careth no more than sufficeth either to resolve of a course or to conclude upon an impossibility, and doth not still chew over the same things, and tread a maze in the same thoughts, and vanisheth in them without issue or conclusion: which kind of cares are most contrary to all divine and human respects.

OF EARTHLY HOPE.

“Better is the sight of the eye, than the apprehension of the mind.”

Pure sense receiving every thing according to the natural impression, makes a better state and government of the mind, than these same imaginations and apprehensions of the mind; for the mind of man hath this nature and property even in the gravest and most settled wits, that from the sense of every particular, it doth as it were bound and spring forward, and take hold of other matters, foretelling unto itself that all shall prove like unto that which beateth upon the present sense; if the sense be of good, it easily runs into an unlimited hope, and into a like fear, when the sense is of evil, according as is said

“The oracles of hopes doth oft abuse.”

And that contrary,

“A froward soothsayer is fear in doubts.”

But yet of fear there may be made some use; for it prepareth patience and awaketh industry,

“No shape of ill, comes new or strange to me,
All sorts set down, yea, and prepared be.”

But hope seemeth a thing altogether unprofitable; for to what end serveth this conceit of good. Consider and note a little if the good fall out less than thou hopest; good though it be, yet less be cause it is, it seemeth rather loss than benefit through thy excess of hope; if the good prove equal and proportionable in event to thy hope, yet the flower thereof by thy hope is gathered; so as when it comes the grace of it is gone, and it seems used, and therefore sooner draweth on satiety; admit thy success prove better than thy hope, it is true a gain seems to be made: but had it not been better to have gained the principal by hoping for nothing, than the increase by hoping for less; and this is the operation of hope in good fortunes, but in misfortunes it weakeneth all force and vigour of the mind;

for neither is there always matter of hope, and if there be, yet if it fail but in part, it doth wholly overthrow the constancy and resolution of the mind; and besides, though it doth carry us through, yet it is a greater dignity of mind to bear evils by fortitude and judgment, than by a kind of absenting and alienation of the mind from things present to things future, for that it is to hope. And therefore it was much lightness in the poets to fain hope to be as a counter-poison of human diseases, as to mitigate and assuage the fury and anger of them, whereas in deed it doth kindle and enrage them, and causeth both doubling of them and relapses. Notwithstanding we see that the greatest number of men give themselves over to their imaginations of hope and apprehensions of the mind in such sort, that ungrateful towards things past, and in a manner unmindful of things present, as if they were eve children and beginners, they are still in longing for things to come. “I saw all men walking under the sun, resort and gather to the second person, which was afterwards to succeed: this is an evil disease, and a great idleness of the mind.”

But perhaps you will ask the question, whether it be not better, when things stand in doubtful terms, to presume the best, and rather hope well than distrust; especially seeing that hope doth cause a greater tranquillity of mind?

Surely I do judge a state of mind which in all doubtful expectations is settled and floateth not; and doth this out of a good government and composition of the affections, to be one of the principal supporters of man’s life: but that assurance and repose of the mind, which only rides at anchor upon hope, I do reject as wavering and weak; not that it is not convenient to foresee and presuppose out of a sound and sober conjecture, as well the good as the evil, that thereby we may fit our actions to the probabilities and likelihoods of their event, so that this be a work of the understanding and judgment, with a due bent and inclination of the affection: but which of you hath so kept his hopes within limits, as when it is so, that you have out of a watchful and strong discourse of the mind set down the better success to be in apparency the more likely; you have not dwelt upon the very muse and forethought of the good to come, and giving scope and favour unto your mind, to fall into such cogitations as into a pleasant dream; and this it

is which makes the mind light, frothy, unequal, and wandering; wherefore all our hope is to be bestowed upon the heavenly life to come: but here on earth the purer our sense's from the infection and tincture of imagination, the better and wiser soul.

"The sum of life to little doth amount,
And therefore doth forbid a longer count."

OF HYPOCRITES.

“I demand mercy, and not sacrifice.”

All the boasting of the hypocrite is of the works of the first table of the law, which is of adoration and duty towards God; whereof the reason is double, both because such works have a greater pomp and demonstration of holiness, and also because they do less cross their affections and desires; therefore the way to convict hypocrites, is to send them from the works of sacrifice to the works of mercy, whence cometh that saying:

“This is pure and immaculate religion with God the Father, to visit orphans and widows in their tribulations:” and that saying, “ He that loveth not his brother whom he hath seen, how can he love God, whom he hath not seen.”

Now there is another kind of deeper and more extravagant hypocrisy; for some, deceiving themselves, and thinking themselves worthy of a more near access and conversation with God, do neglect the duties of charity towards their neighbour, as inferior matters, which did not indeed cause originally the beginning of a monastical life, (for the beginnings were good,) but brought in that excess and abuse which are followed after, for it is truly said, “That the office of praying is a great office in the church:” and it is for the good of the church that there be consorts of men freed from the cares of this world, who may with daily and devout supplications and observances solicit the Divine Majesty for the causes of the church. But unto this ordinance, that other hypocrisy is a nigh neighbour; neither is the general institution to be blamed, but those spirits which exalt themselves too high to be refrained; for even Enoch, which was said to walk with God, did prophesy, as is delivered unto us by Jude, and did endow the church with the fruit of his prophesy which he left: and John Baptist, unto whom they did refer as to the author of a monastical life, travelled and exercised much in the ministry both of prophesy and baptizing; for as to these others, who are so officious towards God, to them belongeth that question, “If thou do justly what is that to God, or what profit doth he take by thy hands?” Wherefore the works of mercy are they which are the works of distinction, whereby to find out

hypocrites. But with heretics it is contrary; for as hypocrites, with their dissembling holiness towards God, do palliate and cover their injuries towards men; so heretics, by their morality and honest carriage towards men, insinuate and make a way with their blasphemies against God.

OF IMPOSTORS.

“Whether we he transported in mind it is to Godward;
Or whether we be sober it is to youward.”

This is the true image and true temper of a man, and of him that is God’s faithful workman; his carriage and conversation towards God is full of passion, of zeal, and of tramisses; thence proceed groans unspeakable, and exultings likewise in comfort, ravishment of spirit and agonies; but contrariwise, his carriage and conversation towards men is full of mildness, sobriety, and appliable demeanour. Hence is that saying, “I am become all things to all men,” and such like. Contrary it is with hypocrites and impostors, for they in the church, and before the people, set themselves on fire, and are carried as it were out of themselves, and becoming as men inspired with holy furies, they set heaven and earth together; but if a man did see their solitary and separate meditations and conversation whereunto God is only privy, he might, towards God, find them not only cold and without virtue, but also full of ill-nature and leaven; “Sober enough to God, and transported only towards men.”

OF THE SEVERAL KINDS OF IMPOSTURE.

”Avoid profane strangeness of words, and oppositions of knowledge falsely so called.”
”Avoid fond and idle fables.”
”Let no man deceive you by high speech.”

There are three forms of speaking, which are as it were the style and phrase of imposture: the first kind is of them, who as soon as they have gotten any subject or matter do straight cast it into an art, inventing new terms of art, reducing all into divisions and distinctions; thence drawing assertions or positions, and so framing oppositions of questions and answers. Hence issueth the cobwebs and clatterings of the schoolmen.

The second kind is of them, who out of the vanity of their wit (as church poets) do make and devise all variety of tales, stories, and examples; whereby they may lead men’s minds to a belief, from whence did grow the legends and infinite fabulous inventions and dreams of the ancient heretics.

The third kind is of them who fill men’s cares with mysteries, high parables, allegories, and illusions; which mystical and profound form many of the heretics also made choice of. By the first kind of these, the capacity and wit of man is fettered and entangled; by the second, it is trained on and inveigled; by the third, it is astonished and enchanted; but by every of them the while it is seduced and abused.

OF ATHEISM.

“The fool hath said in his heart there is no God.”

First, it is to be noted, that the Scripture saith, “The fool hath said in his heart, and not thought in his heart;” that is to say, he doth not so fully think it in judgment, as he hath a good will to be of that belief; for seeing it makes not for him that there should be a God, he doth seek by all means accordingly to persuade and resolve himself, and studies to affirm, prove, and verify it to himself as some theme or position: all which labour, notwithstanding that sparkle of our creation light, whereby men acknowledge a Deity burneth still within; and in vain doth he strive utterly to alienate it or put it out, so that it is out of the corruption of his heart and will, and not out of the natural apprehension of his brain and conceit, that he doth set down his opinion, as the comical poet saith, “Then came my mind to be of mine opinion,” as if himself and his mind had been two divers things; therefore the atheist hath rather said, and held it in his heart, than thought or believed in his heart that there is no God; secondly, it is to be observed, that he hath said in his heart, and not spoken it with his mouth. But again you shall note, that this smothering of this persuasion within the heart cometh to pass for fear of government and of speech amongst men; for, as he saith, “To deny God in a public argument were much, but in a familiar conference were current enough:” for if this bridle were removed, there is no heresy which would contend more to spread and multiply, and disseminate itself abroad, than atheism: neither shall you see those men which are drenched in this frenzy of mind to breathe almost any thing else, or to inculcate even without occasion any thing more than speech tending to atheism, as may appear in Lucrecius the epicure, who makes of his invectives against religion as it were a burden or verse of return to all his other discourses; the reason seems to be, for that the atheist not relying sufficiently upon himself, floating in mind and unsatisfied, and enduring within many faintings, and as it were fails of his opinion, desires by other men’s opinions agreeing with his, to be recovered and

brought again; for it is a true saying, “Whoso laboureth earnestly to prove an opinion to another, himself distrusts it:” thirdly, it is a fool that hath so said in his heart, which is most true; not only in respect that he hath no taste in those things which are supernatural and divine; but in respect of human and civil wisdom: for first of all, if you mark the wits and dispositions which are inclined to atheism, you shall find them light, scoffing, impudent, and vain; briefly of such a constitution as is most contrary to wisdom and moral gravity.

Secondly, amongst statesmen and politics, those which have been of greatest depths and compass, and of largest and most universal understanding, have not only in cunning made their profit in seeming religious to the people, but in truth have been touched with an inward sense of the knowledge of Deity, as they which you shall evermore note to have attributed much to fortune and providence.

Contrariwise, those who ascribed all things to their own cunning and practices, and to the immediate, and apparent causes, and as the prophet saith, “Have sacrificed to their own nets,” have been always but petty counterfeit statesman, and not capable of the greatest actions.

Lastly, this I dare affirm in knowledge of nature, that a little natural philosophy, and the first entrance into it, doth dispose the opinion to atheism; but on the other side, much natural philosophy and wading deep into it, will bring about men’s minds to religion; wherefore atheism every way seems to be combined with folly and ignorance, seeing nothing can can be more justly allotted to be the saying of fools than this, “There is no God”

OF HERESIES.

“You err, not knowing the Scriptures nor the power of God”

This canon is the mother of all canons against heresy; the causes of error are two; the ignorance of the will of God, and the ignorance or not sufficient consideration of his power; the will of God is more revealed by the Scriptures, and therefore the precept is, “Search the Scriptures;” the will of God is more revealed by the creatures, and therefore the precept is, “Behold and consider the creatures:” so is the fulness of the power of God to be affirmed, as we make no imputation to his will; so is the goodness of the will of God to be affirmed, as we make no derogation from his power: therefore true religion seated in the mean betwixt superstition, with superstitious heresies on the one side, and atheism with profane heresies on the other; superstition, rejecting the light of the Scriptures, and giving itself over to ungrounded traditions, and writings doubtful and not canonical, or to new revelations, or to untrue interpretations of the Scriptures, themselves do forge and dream many things of the will of God, which are strange and far distant from the true sense of the Scriptures; but atheism and theomachy rebelleth and mutinieth against the power of God, giving no faith to his word which revealeth his will, upon a discredit and unbelief of his power to whom all things are possible. Now, those heresies which spring out of this fountain seem more heinous than the other; for even in civil governments it is held an offence in a higher degree to deny the power and authority of a prince than to touch his honour and fame. Of these heresies which derogate from the power of God, beside plain atheism, there are three degrees, and they all have one and the same mystery; for all antichristianity worketh in a mystery, that is, under the shadow of good, and it is this, to free and deliver the will of God from all imputation and aspersion of evil. The first degree is of those who make and suppose two principles contrary and fighting one against the other, the one of good, the other of evil.

The second degree is of them to whom the majesty of God seems too much wronged, in setting up and erecting against him another adverse and oppose principle, namely, such a principle as should be active and affirmative, that is to say, cause or fountain of any essence or being; therefore rejecting all such presumption, they do nevertheless bring in against God a principal negative and privative, that is a cause of not being and subsisting, for they will have it to be an inbred proper work, and nature of the matter and creature itself, of itself to turn again and resolve into confusion and nothing, not knowing that it is an effect of one and the same omnipotency to make nothing of somewhat as to make somewhat of nothing. The third degree is, of those who abridge and restrain the former opinion only to those human actions which partake of sin, which actions they will have to depend substantively and originally, and without any sequel or subordination of causes upon the will, and make and set down and appoint larger limits of the knowledge of God than of his power, or rather of that part of God's power, (for knowledge itself is a power whereby he knoweth,) than of that by which he moveth and worketh, making him foreknow some things idle, and as a looker on, which he doth not predestinate nor ordain: not unlike to that devise which Epicurus brought into Democritus' opinion, to take away destiny, and make way to fortune, to wit; the start and slip of Attemus, which always of the wiser sort was rejected as a frivolous shift: but whatsoever depends not of God, as author and principle by inferior links and degrees, that must needs be in place of God, and a new principle, and a certain usurping God; wherefore worthily is that opinion refused as an indignity and derogation to the majesty and power of God, and yet it is most truly affirmed, that God is not the author of evil, not because he is not author, but because not as of evil.

OF THE CHURCH AND THE SCRIPTURES.

“Thou shalt protect them in thy tabernacle from the tradition of tongues.”

The contradiction of tongues doth everywhere meet with us out of the tabernacle of God, therefore whithersoever thou shall turn thyself thou shalt find no end of controversies except thou withdraw thyself into that tabernacle. Thou wilt say it is true, and that it is to be understood of the unity of the church; but hear and note; there was in the tabernacle the ark, and in the ark the testimony or tables of the law: what dost thou tell me of the husk of the tabernacle without the kernel of the testimony: the tabernacle was ordained for the keeping and delivering over from hand to hand of the testimony. In like manner the custody and passing over of the Scriptures is committed unto the church, but the life of the tabernacle is the testimony.

Valerius Terminus of the Interpretation of Nature

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CHAPTER I.

Of the limits and end of knowledge.

In the divine nature, both religion and philosophy hath acknowledged goodness in perfection, science or providence comprehending all things, and absolute sovereignty or kingdom. In aspiring to the throne of power, the angels transgressed and fell; in presuming to come within the oracle of knowledge, man transgressed and fell; but in pursuit towards the similitude of God's goodness or love, which is one thing, for love is nothing else but goodness put in motion or applied, neither man or spirit ever hath transgressed, or shall transgress.

The angel of light that was, when he presumed before his fall, said within himself, "I will ascend and be like unto the Highest;" not God, but the Highest. To be like to God in goodness, was no part of his emulation: knowledge, being in creation an angel of light, was not the want which did most solicit him; only because he was a minister he aimed at a supremacy; therefore his climbing or ascension was turned into a throwing down or precipitation.

Man, on the other side, when he was tempted before he fell, had offered unto him this suggestion, "that he should be like unto God." But how? not simply, but in this part, "knowing good and evil." For being in his creation invested with sovereignty of all inferior creatures, he was not needy of power or dominion. But again, being a spirit newly enclosed in a body of earth, he was fittest to be allured with appetite of light and liberty of knowledge. Therefore this approaching and intruding into God's secrets and mysteries, was rewarded with a further removing and estranging from God's presence. But as to the goodness of God, there is no danger in contending or advancing towards a similitude thereof; as that which is open and propounded to our imitation. For that voice, whereof the heathen and all other errors of religion have ever confessed that it sounds not like man, "Love your enemies; be you like unto your heavenly Father, that suffereth his rain to fall both upon the just and the unjust," doth well declare, that we can in that point commit no excess. So again we find it often

repeated in the old law, “Be ye holy as I am holy;” and what is holiness else but goodness, as we consider it separate and guarded from all mixture, and all access of evil!

Wherefore seeing that knowledge is of the number of those things which are to be accepted of with caution and distinction; being now to open a fountain, such as it is not easy to discern where the issues and streams thereof will take and fall; I thought it good and necessary in the first place, to make a strong and sound head or bank to rule and guide the course of the waters; by setting down this position or firmament, namely, “That all knowledge is to be limited by religion, and to be referred to use and action.”

For if any man shall think, by view and inquiry into these sensible and material things, to attain to any light for the revealing of the nature or will of God, he shall dangerously abuse himself. It is true, that the contemplation cf the creatures of God hath for end, as to the natures of the creatures themselves, knowledge; out as to the nature of God, no knowledge, butwonder; which is nothing else but contemplation broken off, or losing itself. Nay further, as it was aptly said by one of Plato’s school, “the sense of man resembles the sun, which openeth and revealeth the terrestrial globe, but obscureth and concealeth the celestial;” so doth the sense discover natural things, but darken and shut up divine. And this appeareth sufficiently in that there is no proceeding in invention of knowledge, but by similitude; and God is only self-like, having nothing in common with any creature, otherwise as in shadow and trope. Therefore attend his will as himself openeth it, and give unto faith that which unto faith belongeth; for more worthy it is to believe than to think or know, considering that in knowledge, as we now are capable of it, the mind suffereth from inferior natures; but in all belief it suffereth from a spirit, which it holdeth superior, and more authorized than itself.

To conclude; the prejudice hath been infinite, that both divine and human knowledge hath received by the intermingling and tempering of the one with the other: as that which hath filled the one full of heresies, and the other full of speculative fictions and vanities.

But now there are again, which, in a contrary extremity to those which give to contemplation an over-large scope, do offer too great a restraint to natural and lawful knowledge; being unjustly jealous that every reach and depth of knowledge wherewith their conceits have not been acquainted, should be too high an elevation of man's wit, and a searching and ravelling too far into God's secrets; an opinion that ariseth either of envy, which is proud weakness, and to be censured and not confuted, or else of a deceitful simplicity. For if they mean that the ignorance of a second cause doth make men more devoutly to depend upon the providence of God, as supposing the effects to come immediately from his hand; I demand of them, as Job demanded of his friends, "Will you lie for God, as man will for man to gratify him?" But if any man, without any sinister humour, doth indeed make doubt that this digging further and further into the mine of natural knowledge, is a thing without example, and uncommended in the Scriptures, or fruitless; let him remember and be instructed: for behold it was not that pure light of natural knowledge, whereby man in paradise was able to give unto every living creature a name according to his propriety, which gave occasion to the fall; but it was an aspiring desire to attain to that part of moral knowledge, which defineth of good and evil, whereby to dispute God's commandments, and not to depend upon the revelation of his will, which was the original temptation. And the first holy records, which within those brief memorials of things which passed before the flood, entered few things as worthy to be registered, but only lineages and propagations, yet nevertheless honour the remembrance of the inventor both of music and works in metal. Moses again, who was the reporter, is said to have been seen in all the Egyptian learning, which nation was early and leading in matter of knowledge. And Solomon the king, as out of a branch of his wisdom extraordinarily petitioned and granted from God, is said to have written a natural history of all that is green, from the cedar to the moss, which is but a rudiment between putrefaction and an herb, and also of all that liveth and moveth. And if the book of Job be turned over, it will be found to have much aspersion of natural philosophy. Nay, the same Solomon the kinga ffirmeth directly, that the glory of God "is to conceal a thing, but the

glory of the king is to find it out," as if, according to the innocent play of children, the Divine Majesty took delight to hide his works, to the end to have them found out; for in naming the king he intendeth man, taking such a condition of man as hath most excellency and greatest commandments of wits and means, alluding also to his own person, being truly one of those clearest burning lamps, whereof himself speaketh in another place, when he saith, "The spirit of man is as the lamp of God, wherewith he searcheth all inwardness;" which nature of the soul the same Solomon, holding precious and inestimable, and therein conspiring with the affection of Socrates, who scorned the pretended learned men of his time for raising great benefit of their learning, whereas Anaxagoras contrariwise, and divers others, being born to ample patrimonies, decayed them in contemplation, delivereth it in precept yet remaining, "Buy the truth and sell it not; and so of wisdom and knowledge."

And lest any man should retain a scruple, as if this thirst of knowledge were rather an humour of the mind, than an emptiness or want in nature, and an instinct from God; the same author defineth of it fully, saying, "God hath made every thing in beauty according to season; also he hath set the world in man's heart, yet can he not find out the work which God worketh from the beginning to the end:" declaring not obscurely that God hath framed the mind of man as a glass, capable of the image of the universal world, joying to receive the signature thereof, as the eye is of light; yea, not only satisfied in beholding the variety of things, and vicissitude of times, but raised also to find out and discern those ordinances and decrees, which throughout all these changes are infallibly observed. And although the highest generality of motion, or summary law of nature, God should still reserve within his own curtain; yet many and noble are the inferior and secondary operations which are within man's sounding. This is a thing which I cannot tell whether I may so plainly speak as truly conceive, that as all knowledge appeareth to be a plant of God's own planting, so it may seem the spreading and flourishing, or at least the bearing and fructifying of this plant, by a providence of God, nay, not only by a general providence but by a special prophecy, was appointed to this autumn ot the world: for to my understanding, it

is not violent to the letter, and safe now after the event, so to interpret that place in the prophecy of Daniel, where, speaking of the latter limes, it is said, “Many shall pass to and fro, and science shall be increased;” as if the opening of the world by navigation and commerce, and the further discovery of knowledge, should meet in one time or age.

But howsoever that be, there are besides the authorities of Scriptures before recited, two reasons of exceeding great weight and force, why religion should dearly protect all increase of natural knowledge: the one, because it leadeth to the greater exaltation of the glory of God; for as the Psalms and other Scriptures do often invite us to consider, and to magnify the great and wonderful works of God; so if we should rest only in the contemplation of those shows which first offer themselves to our senses, we should do a like injury to the majesty of God, as if we should judge of the store of some excellent jeweller, by that only which is set out to the street in his shop. The other reason is, because it is a singular help and preservative against unbelief and error: for saith our Saviour, “You err, not knowing the Scriptures, nor the power of God;” laying before us two books or volumes to study, if we will be secured from error; first the Scriptures revealing the will of God, and then the creatures expressing his power; for that latter book will certify us, that nothing which the first, teacheth shall be thought impossible. And most sure it is, and a true conclusion of experience, that a little natural philosophy inclineth the mind to atheism, but a further proceeding bringeth the mind back to religion.

To conclude then: Let no man presume to check the liberality of God’s gifts, who, as was said, “hath set the world in man’s heart.” So as whatsoever is not God, but parcel of the world, he hath fitted it to the comprehension of man’s mind, if man will open and dilate the powers of his understanding as he may.

But yet evermore it must be remembered, that the least part of knowledge passed to man by this so large a charter from God, must be subject to that use for which God hath granted it, which is the benefit and relief of the state and society of man: for otherwise all manner of knowledge becometh malign and serpentine, and therefore, as carrying the quality of the serpent’s sting and malice, it maketh

the mind of man to swell; as the Scripture sayeth excellently, “Knowledge bloweth up, but charity buildeth up.” And again, the same author doth notably disavow both power and knowledge, such as is not dedicated to goodness or love; for saith he, “If I have all faith, so as I could remove mountains,” there is power active; “If I render my body to the fire,” there is power passive; “If I speak with the tongues of men and angels,” there is knowledge, for language is but the conveyance of knowledge, “all were nothing.”

And therefore it is not the pleasure of curiosity, nor the quiet of resolution, nor the raising of the spirit, nor victory of wit, nor faculty of speech, nor lucre of profession, nor ambition of honour or fame, or inablement for business, that are the true ends of knowledge; some of these being more worthy than other, though all inferior and degenerate: but it is a restitution and reinvesting, in great part, of man to the sovereignty and power, for whensoever he shall be able to call the creatures by their true names, he shall again command them, which he had in his first state of creation. And to speak plainly and clearly, it is a discovery of all operations and possibilities of operations from immortality, if it were possible, to the meanest mechanical practice. And therefore knowledge, that tendeth but to satisfaction, is but as a courtesan, which is for pleasure, and not for fruit or generation. And knowledge that tendeth to profit or profession, or glory, is but as the golden ball thrown before Atalanta; which while she goeth aside, and stoopeth to take up, she hindereth the race. And knowledge referred to some particular point of use, is but as Harmodius, which putteth down one tyrant: and not like Hercules, who did perambulate the world to suppress tyrants and giants and monsters in every part.

It is true, that in two points the curse is peremptory, and not to be removed: the one, that vanity must be the end in all human effects; eternity being resumed though the revolutions and periods may be delayed. The other, that the consent of the creature being now turned into reluctation, this power cannot otherwise be exercised and administered but with labour, as well in inventing as in executing; yet nevertheless chiefly that labour and travel which is described by the sweat of the brows, more than of the body; that is, such travel as is joined with the

working and discursion of the spirits in the brain: for as Solomon saith excellently, “The fool putteth to more strength, but the wise man considereth which way;” signifying the election of the mean to be more material than the multiplication of endeavour. It is true also that there is a limitation rather potential than actual, which is when the effect is possible, but the time or place yieldeth not the matter or basis whereupon man should work. But notwithstanding these precincts and bounds, let it be believed, and appeal thereof made to time, with renunciation nevertheless to all the vain and abusing promises of alchemists and magicians, and such like light, idle, ignorant, credulous, and fantastical wits and sects, that the new-found world of land was not greater addition to the ancient continent, than there remaineth at this day a world of inventions and sciences unknown, having respect to those that are known, with this difference, that the ancient regions of knowledge will seem as barbarous, compared with the new; as the new regions of people seem barbarous, compared to many of the old.

The dignity of this end, of endowment of man’s life with new commodities, appeareth by the estimation that antiquity made of such as guided thereunto; for whereas founders of states, lawgivers, extirpers of tyrants, fathers of the people, were honoured but with the titles of worthies or demigods, inventors were ever consecrated amongst the gods themselves. And if the ordinary ambitions of men lead them to seek the amplification of their own power in their countries, and a better ambition than that hath moved men to seek the amplification of the power of their own countries amongst other nations: better again and more worthy must that aspiring be, which seeketh the amplification of the power and kingdom of mankind over the world: the rather, because the other two prosecutions are ever culpable of much perturbation and injustice; but this is a work truly divine, which cometh “in aura leni,” without noise or observation.

The access also to this work hath been by that port or passage, which the Divine Majesty, who is unchangeable in his ways, doth infallibly continue and observe; that is, the felicity wherewith he hath blessed an humility of mind, such as rather laboureth to spell, and so by degrees to read in the volumes of his

creatures, than to solicit and urge, and as it were to invocate a man's own spirit to divine, and give oracles unto him. For as in the inquiry of divine truth, the pride of man hath ever inclined to leave the oracles of God's word, and to vanish in the mixture of their own inventions; so in the selfsame manner, in inquisition of nature, they have ever left the oracles of God's works, and adored the deceiving and deformed imagery, which the unequal mirrors of their own minds have represented unto them. Nay, it is a point fit and necessary in the front, and beginning of this work, without hesitation or reservation to be professed, that it is no less true in this human kingdom of knowledge, than in God's kingdom of heaven, that no man shall enter into it, "except he become first as a little child."

Of the impediments of knowledge.
Being the IVth chapter, the preface only of it.

In some things it is more hard to attempt than to achieve; which falleth out, when the difficulty is not so much in the matter or subject, as it is in the crossness and indisposition of the mind of man to think of any such thing, to will or to resolve it; and therefore Titus Livius in his declamatory digression, wherein he doth depress and extenuate the honour of Alexander's conquests saith, "Nihil aliud quam bene ausus vana contemnere:" in which sort of things it is the manner of men first to wonder that any such thing should be possible, and after it is found out, to wonder again how the world should miss it so long. Of this nature I take to be the invention and discovery of knowledge, &c.

The impediments which have been in the times, and in diversion of wits.
Being the Vth chapter, a small fragment in the beginning of that chapter.

The encounters of the times have been nothing favourable and prosperous for the invention of knowledge, so as it is not only the daintiness of the seed to take, and the ill mixture and unliking of the ground to nourish or raise this plant, but

the ill season also of the weather, by which it hath been checked and blasted. Especially in that the seasons have been proper to bring up and set forward other more hasty and indifferent plants, whereby this of knowledge hath been starved and overgrown; for in the descent of times always there hath been somewhat else in reign and reputation, which hath generally aliened and diverted wits and labours from that employment.

For as for the uttermost antiquity, which is like fame that muffles her head, and tells tales, I cannot presume much of it; for I would not willingly imitate, the manner of those that describe maps, which when they come to some far countries, whereof they have no knowledge, set down how there be great wastes and deserts there: so I am not apt to affirm that they knew little, because what they knew is little known to us. But if you will judge of them by the last traces that remain to us, you will conclude, though not so scornfully as Aristotle doth, that saith our ancestors were extreme gross, as those that came newly from being moulded out of the clay, or some earthly substance; yet reasonably and probably thus, that it was with them in matter of knowledge, but as the dawning or break of day. For at that time the world was altogether home-bred, every nation looked little beyond their own confines or territories, and the world had no thorough lights then, as it hath had since by commerce and navigation, whereby there could neither be that contribution of wits one to help another, nor that variety of particulars for the correcting the customary conceits.

And as there could be no great collection of wits of several parts or nations, so neither could there be any succession of wits of several times, where by one might refine the other, in regard they had not history to any purpose. And the manner of their traditions was utterly unfit and unproper for amplification of knowledge. And again, the studies of those times, you shall find, besides wars, incursions and rapines, which were then almost everywhere betwixt states adjoining, the use of leagues and confederacies being not then known, were to populate by multitude of wives and generation, a thing at this day in the waster part of the West Indies principally effected; and to build, sometimes for habitation, towns and cities; sometimes for fame and memory, monuments,

pyramids, colosses, and the like. And if there happened to rise up any more civil wits; then would he found and erect some new laws, customs, and usages, such as now of late years, when the world was revolute almost to the like rudeness and obscurity, we see both in our own nation and abroad many examples of, as well in a number of tenures reserved upon men's lands, as in divers customs of towns and manors, being the devises that such wits wrought upon in such times of deep ignorance, &c.

The impediments of knowledge for want of a true succession of wits, and that hitherto the length of one mail's life hath been the greatest measure of knowledge.

Being the VIth chapter, the whole chapter.

In arts mechanical the first devise cometh shortest, and time addeth and perfecteth. But in sciences of conceit, the first author goeth furthest, and time leeseth and corrupteth. Painting, artillery, sailing, and the like, grossly managed at first, by time accommodate and refined. The philosophies and sciences of Aristotle, Plato, Democritus, Hippocrates, of most vigour at first, by time degenerated and irabased. In the former, many wits and industries contributed in one. In the latter many men s wits spent to deprave the wit of one.

The error is both in the deliverer and in the receiver. He that delivereth knowledge, desireth to deliver it in such form as may be soonest believed, and not as may easiliest be examined. He that receiveth knowledge desireth rather present satisfaction than expectant search, and so rather not to doubt than not to err. Glory maketh the author not lay open his weakness; and sloth maketh the disciple not to know his strength.

Then begin men to aspire to the second prizes, to be a profound interpreter and commenter, to be a sharp champion and defender, to be a methodical compounder and abridger. And this is the unfortunate succession of wits which the world hath yet had, whereby the patrimony of all knowledge goeth not on

husbanded or improved, but wasted and decayed. For knowledge is like a water, that will never arise again higher than the level from which it fell. And therefore to go beyond Aristotle by the light of Aristotle, is to think that a borrowed light can increase the original light from whom it is taken. So then, no true succession of wits having been in the world; either we must conclude, that knowledge is but a task for one man's life, and then vain was the complaint, that "life is short, and art is long:" or else, that the knowledge that now is, is but a shrub; and not that tree which is never dangerous, but where it is to the purpose of knowing good and evil; which desire ever riseth upon an appetite to elect, and not to obey, and so containeth in it a manifest defection.

That the pretended succession nf wits hath been evil placed, for as much as after variety of sects and opinions, the most popular and not the truest prevaileth and weareth out the rest.

Being the VIIth chapter, a fragment.

It is sensible to think, that when men enter first into search and inquiry, according to the several rames and compositions of heir understanding, hey light upon differing conceits, and so all opinions and doubts are beaten over; and then men having made a taste of all, wax weary of variety, and so reject the worst, and hold themselves to te best, either some one, if it be eminent: or some two or three, if they be in some equality; vhich afterwards are received and carried on, and the rest extinct.

But truth is contrary; and that time is like a river which carrieth down things which are light and blown up, and sinketh and drowneth that which is sad and weighty. For howsoever governments have several forms, sometimes one governing, sometimes few, sometimes the multitude; yet the state of knowledge is ever a democracy, and that prevaileth which is most agreeable to the senses and conceits of people. As for example, there is no great doubt, but he that did put the beginnings of things to be solid, void, and motion to the centre, was in

better earnest than he that put matter, form, and shift; or he that put the mind, motion, and matter. For no man shall enter into inquisition of nature, but shall pass by that opinion of Democritus; whereas he shall never come near the other two opinions, but leave them aloof, for the schools and table-talk. Yet those of Aristotle and Plato, because they be both agreeable to popular sense, and the one was uttered with subtilty and the spirit of contradiction, and the other with a style of ornament and majesty, did hold out, and the other gave place, &c.

Of the impediments of knowledge, in handling it by parts, and in slipping off particular sciences from the root and stock of universal knowledge.
Being the VIIIth chapter, the whole chapter.

Cicero, the orator, willing to magnify his own profession, and thereupon spending many words to maintain that eloquence was not a shop of good words and elegancies, but a treasury and receipt of all knowledges, so far forth as may appertain to the handling and moving of the minds and affections of men by speech, maketh great complaint of the school of Socrates; that whereas before his time the same professors of wisdom in Greece did pretend to teach an universal sapience and knowledge both of matter and words, Socrates divorced them, and withdrew philosophy, and left rhetoric to itself, which by that destitution became but a barren and unnoble science. And in particular sciences we see, that if men fall to subdivide their labours, as to be an oculist in physic, or to be perfect in some one title of the law or the like, they may prove ready and subtile, but not deep or sufficient, no, not in that subject which they do particularly attend, because of that consent which it hath with the rest. And it is a matter of common discourse of the chain of sciences, how they are linked together, insomuch as the Grecians, who had terms at will, have fitted it of a name of Circle-Learning. Nevertheless I that hold it for a great impediment towards the advancement and further invention of knowledge, that particular arts and sciences have been disincorporated from general knowledge, do not

understand one and the same thing, which Cicero's discourse and the note and conceit of the Grecians in their word Circle-Learning do intend. For I mean not that use which one science hath of another for ornament or help in practice, as the orator hath of knowledge of affections for moving, or as military science may have use of geometry for fortifications; but I mean it directly of that use by way of supply of light and information, which the particulars and instances of one science do yield and present for the framing or correcting of the axioms of another science in their very truth and notion. And therefore that example of oculist and title lawyers doth come nearer my conceit than the other two; for sciences distinguished have a dependence upon universal knowledge to be augmented and rectified by the superior light thereof; as well as the parts and members of a science have upon the maxims of the same science, and the mutual light and consent which one part receiveth of another. And therefore the opinion of Copernicus in astronomy, which astronomy itself cannot correct, because it is not repugnant to any of the appearances, yet natural philosophy doth correct. On the other side, if some of the ancient philosophers had been perfect in the observations of astronomy, and had called them to counsel, when they made their principles and first axioms, they would never have divided their philosophy, as the cosmographers do their descriptions by globes, making one philosophy for heaven, and another for under heaven, as in effect they do.

So if the moral philosophers, that have spent such an infinite quantity of debate touching good and the highest good, had cast their eye abroad upon nature, and beheld the appetite that is in all things to receive and to give; the one motion affecting preservation, and the other multiplication; which appetites are most evidently seen in living creatures, in the pleasure of nourishment and generation; and in man do make the aptest and most natural division of all his desires, being either of sense of pleasure, or sense of power; and in the universal frame of the world are figured, the one in the beams of heaven which issue forth, and the other in the lap of the earth which takes in: and again, if they had observed the motion of congruity, or situation of the parts in respect of the whole, evident in so many particulars: and lastly, if they had considered the

motion, familiar in attraction of things, to approach to that which is higher in the same kind: when by these observations, so easy and concurring in natural philosophy, they should have found out this quaternion of good, in enjoying or fruition, effecting or operation, consenting or proportion, and approach or assumption; they would have saved and abridged much of their long and wandering discourses of pleasure, virtue, duty, and religion. So likewise in this same logic and rhetoric, or acts of argument and grace of speech, if the great masters of them would but have gone a form lower, and looked but into the observations of grammar concerning the kinds of words, their derivations, deflexions, and syntax, specially enriching the same, with the helps of several languages, with their differing properties of words, phrases, and tropes, they might have found out more and better footsteps of common reason, help of disputation, and advantages of cavillation, than many of these which they have propounded. So again, a man should be thought to dally, if he did note how the figures of rhetoric and music are many of them the same. The repetitions and traductions in speech, and the reports and hauntings of sounds in music, are the very same things. Plutarch hath almost made a book of the Lacedæmonian kind of jesting, which joined every pleasure with distaste. “Sir,” said a man of art to Philip king of Macedon, when he controlled him in his faculty, “God forbid your fortune should be such as to know these things better than I.” In taxing his ignorance in his art, he represented to him the perpetual greatness of his fortune, leaving him no vacant time for so mean a skill. Now in music it is one of the ordinariest flowers to fall from a discord, or hard tune, upon a sweet accord. The figure that Cicero and the rest commend, as one of the best points of elegancy, which is the fine checking of expectation, is no less well known to the musicians, when they have a special grace in flying the close or cadence. And these are no allusions but direct communities, the same delights of the mind being to be found not only in music, rhetoric, but in moral philosophy, policy, and other knowledges, and that obscure in the one, which is more apparent in the other; yea, and that discovered in the one, which is not found at all in the other; and so one science greatly aiding to the invention and augmentation of another.

And therefore, without this intercourse, the axioms of sciences will fall out to be neither full nor true; but will be such opinions, as Aristotle in some places doth wisely censure, when he saith, “These are the opinions of persons that have respect but to a few things.” So then we see, that this note leadeth us to an administration of knowledge in some such order and policy, as the King of Spain, in regard of his great dominions, useth in state: who, though he hath particular councils for several countries and affairs, yet had one council of state, or last resort, that receiveth the advertisements and certificates from all the rest. Hitherto of the diversion, succession, and conference of wits.

That the end and scope nf knowledge hath been generally mistaken, and that men were never well advised what it was they sought.

Being the IXth chapter, immediately preceding the Inventory, and inducing the same.

It appeareth then how rarely the wits and labours of men have been converted to the severe and original inquisition of knowledge; and in those who have pretended, what hurt hath been done by the affectation of professors, and the distraction of such as were no professors; and how there was never in effect any conjunction or combination of wits in the first and inducing search, but that every man wrought apart, and would either have his own way, or else would go no further than his guide, having in the one case the honour of a first, and in the other the ease of a second; and lastly, how in the descent and continuance of wits and labours, the succession hath been in the most popular and weak opinions, like unto the weakest natures, which many times have most children; and in them also the condition of succession hath been rather to defend and to adorn, than to add; and if to add, yet that addition to be rather a refining of a part, than an increase of the whole. But the impediments of time and accidents, though they have wrought a general indisposition, yet are they not so peremptory and

binding, as the internal impediments and clouds in the mind and spirit of man, whereof it now followeth to speak.

The Scripture, speaking of the worst sort of error, saith, “Errare fecit eos in invio et non in via.” For a man may wander in the way, by rounding up and down; but if men have failed in their very direction and address, that error will never by good fortune correct itself. Now it hath fared with men in their contemplations, as Seneca saith it fareth with them in their actions, “De partibus vitæ quisque deliberat, de summa nemo.” A course very ordinary with men who receive for the most part their final ends from the inclination of their nature, or from common example and opinion, never questioning or examining them, nor reducing them to any clear certainty, and use only to call themselves to account and deliberation touching the means and second ends, and thereby set themselves in the right way to the wrong place. So likewise upon the natural curiosity and desire to know, they have put them selves in way without foresight or consideration of their journey’s end.

For I find that even those that have sought knowledge for itself, and not for benefit, or ostentation, or any practicable enablement in the course of their life, have nevertheless propounded to themselves a wrong mark, namely, satisfaction, which men call truth, and not operation. For as in the courts and services of princes and slates, it is a much easier matter to give satisfaction than to do the business; so in the inquiring of causes and reasons it is much easier to find out such causes as will satisfy the mind of man and quiet objections, than such causes as will direct him and give him light to new experiences and inventions. And this did Celsus note wisely and truly, how that the causes which are in use, and whereof the knowledges now received do consist, were in time minors and subsequents to the knowledge of the particulars, out of which they were induced and collected; and that it was not the light of those causes which discovered particulars, but only the particulars being first found, men did fall on glossing and discoursing of the causes; which is the reason, why the learning that now is hath the curse of barrenness, and is courtesan-like, for pleasure and not for fruit. Nay, to compare it rightly, the strange fiction of the poets of the transformation

of Scylla, seemeth to be a lively emblem of this philosophy and knowledge: a fair woman upward in the parts of show, but when you come to the parts of use and generation, barking monsters: for no better are the endless distorted questions, which ever have been, and of necessity must be, the end and womb of such knowledge. . . . . .

But yet nevertheless, here I may be mistaken, by reason of some which have much in their pen the referring sciences to action and the use of man, which mean quite another matter than I do. For they mean a contriving of directions, and precepts for readiness of practice, which I discommend not, so it be not occasion that some quantity of the science be lost; for else it will be such a piece of husbandry, as to put away a manor lying somewhat scattered, to buy in a close that lieth handsomely about a dwelling. But my intention contrariwise is to increase and multiply the revenues and possessions of man, and not to trim up only, or order with conveniency the grounds whereof he is already stated. Wherefore the better to make myself understood, that I mean nothing less than words, and directly to demonstrate the point which we are now upon, that is, what is the true end, scope, on office of knowledge, which I have set down to consist not in any plausible, delectable, reverend, or admired discourse, or any satisfactory arguments, but in effecting and working, and in discovery of particulars not revealed before, for the better endowment and help of man's life; I have thought good to make, as it were, a kalendar or inventory of the wealth, furniture, or means of man, according to his present estate, as far as it is known; which I do not to show any universality of sense or knowledge, and much less to make a satire of reprehension in respect of wants and errors, but partly because cogitations new had need of some grossness and inculcation to make them perceived, and chiefly to the end, that for the time to come, upon the account and state now made and cast up, it may appear what increase this new manner of use and administration of the stock, if it be once planted, shall bring with it hereafter; and for the time present, in case I should be prevented by death to propound and reveal this new light as I purpose, yet I may at the least give some awaking note, both of the wants in man's present condition, and the nature of the supplies to be

wished; though for mine own part neither do I much build upon my present anticipations, neither do I think ourselves yet learned or wise enough to wish reasonably: for as it asks some knowledge to demand a question not impertinent; so it asketh some sense to make a wish not absurd.

The Inventory, or an enumeration and view of inventions already discovered in use, together with a note of the wants, and the nature of the supplies.
Being the Xth chapter; and this a small fragment thereof, being the preface to the Inventory.

The plainest method, and most directly pertinent to this intention, will be to make distribution of sciences, arts, inventions, works, and their portions, according to the use and tribute which they yield and render to the conditions of man's life, and under those several uses, being as several offices of provisions, to charge and tax what may be reasonably exacted or demanded, not guiding ourselves neither by the poverty of experiences and probations, nor according to the vanity of credulous imaginations; and then upon those charges and taxations to distinguish and present, as it were, in several columns, what is extant and already found, and what is defective and further to be provided. Of which provisions, because in many of them, after the manner of slothful and faulty officers and accomptants, it will be returned by way of excuse, that no such are to be had, it will be fit to give some light of the nature of the supplies, whereby it will evidently appear, that they are to be compassed and procured. And yet nevertheless on the other side again, it will be as fit to check and control the vain and void assignations, and gifts, when by certain ignorant, extravagant, and abusing wits have pretended to indue the state of man with wonders, differing as much from truth in nature, as Cæsar's Commentaries differeth from the acts of King Arthur, or Huon of Bourdeaux in story. For it is true that Cæsar did greater things than those idle wits had the audacity to feign their supposed worthies to have done; but he did them not in that monstrous and fabulous manner.

The chapter immediately following the Inventory.
Being the XIth in order, a part thereof.

It appeareth then, what is now in proposition, not by general circumlocution, but by particular note, no former philosophy varied in terms or method; no new placet or speculation upon particulars already known; no referring to action by any manual of practice, but the revealing and discovering of new inventions and operations. This to be done without the errors and conjectures of art, or the length or difficulties of experience; the nature and kinds of which inventions have been described as they could be discovered; for your eye cannot pass one kenning without further sailing: only we have stood upon the best advantages of the notions received, as upon a mount, to show the knowledges adjacent and confining. If therefore the true end of knowledge not propounded, hath bred large error, the best and perfectest condition of the same end, not perceived, will cause some declination. For when the butt is set up, men need not rove, but except the white be placed, men cannot level. This perfection we mean, not in the worth of the effects, but in the nature of the direction; for our purpose is not to stir up men's hopes, but to guide their travels. The fulness of direction to work, and produce any effect, consisteth in two conditions, certainty and liberty. Certainty is, when the direction is not only true for the most part, but infallible. Liberty is, when the direction is not restrained to some definite means, but comprehendeth all the means and ways possible: for the poet saith well, "Sapientibus undique latæ sunt viæ;" and where there is the greatest plurality of change, there is the greatest singularity of choice. Besides, as a conjectural direction maketh a casual effect, so a particular and restrained direction is no less casual than uncertain. For those particular means whereunto it is tied may be out of your power, or may be accompanied with an overvalue of prejudice; and so if for want of certainty in direction you are frustrated in success, for want of variety in direction you are stopped in the attempt. If therefore your direction be

certain, it must refer you, and point you to somewhat, which, if it be present, the effect you seek will of necessity follow, else may yon perform and not obtain. If it be free, then must it refer you to somewhat, which, if it be absent, the effect you seek will of necessity withdraw, else may you have power and not attempt. This notion Aristotle had in light, though not in use. For the two commended rules by him set down, whereby the axioms of sciences are precepted to be made convertible, and which the latter men have not without elegancy surnamed, the one the rule of truth, because it preventeth deceit, the other the rule of prudence, because it freeth election, are the same thing in speculation and affirmation, which we now observe. An example will make my meaning attained, and yet percase make it thought that they attained it not.

Let the effect to be produced be whiteness; let the first direction be, that if air and water be intermingled, or broken in small portions together, whiteness will ensue, as in snow, in the breaking of the ways of the sea and rivers, and the like. This direction is certain, but very particular, and restrained, being tied but to air and water. Let the second direction be, that if air be mingled as before with any transparent body, such nevertheless as is uncoloured and more grossly transparent than air itself, that then, &c. as glass or crystal, being beaten to fine powder, by the interposition of the air becometh white; the white of an egg, being clear of itself, receiving air by agitation, becometh white, receiving air by concoction becometh white; here you are freed from water, and advanced to a clear body, and still tied to air. Let the third direction exclude or remove the restraint of an uncoloured body, as in amber, sapphires, &c. which beaten to fine powder, become, white in wine and beer; which brought to froth, become white. Let the fourth direction exclude the restraint of a body more grossly transparent than air, as in flame, being a body compounded between air and a finer substance than air; which flame if it were not for the smoke, which is the third substance that incorporateth itself and dieth the flame would be more perfect white. In all these four directions air still beareth a part. Let the fifth direction then be, that if any bodies, both transparent, but in an unequal degree, be mingled as before, whiteness will follow; as oil and water beaten to an ointment,

though by settling, the air which gathereth in the agitation be evaporate, ye remaineth white; and the powder of glass, or crystal, put into water, whereby the air giveth place, yet remaineth white, though not so perfect. Now are you freed from air, but still you are tied to transparent bodies. To ascend further by scale I do forbear, partly because it would draw on the example to an over-great length, but chiefly because it would open that which in this work determine to reserve; for to pass through the whole history and observation of colours and objects visible, were too long a digression; and our purpose is now to give an example of a free direction, theieby to distinguish and describe it; and not to set down a form of interpretation how to recover and attain it. But as we intend not now to reveal, so we are circumspect not to mislead; and therefore, this warning being given, returning to our purpose in hand, we admit the sixth direction to be, that all bodies, or parts of bodies, which are unequal equally, that is, in a simple proportion, do represent whiteness; we will explain this, though we induce it not. It is then to be understood, that absolute equality produceth transparence, inequality in simple order or proportion produceth whiteness, inequality in compound or respective order or proportion prcduceth other colours, and absolute or orderless inequality produceth blackness; which diversity if so gross a demonstration be needful, may be signified by four tables; a blank, a chequer, a fret, and a medley; whereof the fret is evident to admit great variety. Out of this assertion are satisfied a multitude of effects and observations, as that whiteness and blackness are most incompatible with transparence; that whiteness keepeth light, and blackness stoppeth light, but neither passeth it; that whiteness or blackness are never produced in rainbows, diamonds, crystals, and the like; that white giveth no dye, and black hardly taketh dye; that whiteness seemeth to have an affinity with dryness, and blackness with moisture; that adufition causeth blackness, and calcination whiteness; that flowers are generally of fresh colours, and rarely black, &c., all which I do now mention confusedly by way of derivation, and not by way of induction. This sixth direction, which I have thus explained, is of good and competent liberty, for whiteness fixed and inherent; but not for whiteness fantastical, or appearing, as shall be afterwards touched.

But first do you need a reduction back to certainty or verity; for it is not all position or contexture of unequal bodies that will produce colours; for aquafortis, oil of vitriol, &c. more manifestly, and many other substances more obscurely, do consist of very unequal parts, which yet are transparent and clear. Therefore the reduction must be, that the bodies or parts of bodies so intermingled as before, be of a certain grossness or magnitude; for the unequalities which move the sight must have a further dimension and quantity than those which operate many other effects. Some few grains of saffron will give a tincture to a tun of water, but so many grains of civet will give a perfume to a whole chamber of air. And therefore when Democritus, from whom Epicurus did borrow it, held that the position of the solid portions was the cause of colours; yet in the very truth of this assertion he should have added, that the portions are required to be of some magnitude. And this is one cause why colours have little inwardness and necessitude with the nature and proprieties of things, those things resembling in colour, which otherwise differ most, as salt and sugar: and contrariwise differing in colour, which otherwise resemble most, as the white and blue violets, and the several veins of one agate or marble, by reason that other virtues consist in more subtile proportions than colours do; and yet are there virtues and natures which require a grosser magnitude than colours, as well as scents and divers other require a more subtile; for as the portion of a body will give forth scent, which is too small to be seen; so the portion of a body will show colours, which is too small to be endued with weight: and therefore one of the prophets with great elegancy describing how all creatures carry no proportion towards God the creator, saith, “That all the nations in respect of him are like the dust upon the balance;” which is a thing appeareth, but weigheth not. But to return, there resteth a further freeing of this sixth direction: for the clearness of a river or stream showeth white at a distance, and crystalline glasses deliver the face or any other object falsified in whiteness, and long beholding the snow to a weak eye giveth an impression of azure, rather than of whiteness. So as for whiteness in apparition only, and representation, by the qualifying of the light, altering the intermedium, or affecting the eye itself, it reacheth not. But

you must free your direction to the producing of such an incidence, impression, or operation, as may cause a precise and determinate passion of the eye, a matter which is much more easy to induce than that which we have passed through; but yet because it hath a full coherence both with that act of radiation, which hath hitherto been conceived and termed so unproperly and untruly, by some, an effluxion of spiritual species, and by others, an investing of the intermedium, with a motion which successively is conveyed to the eye, and with the act of sense, wherein I should likewise open that which I think good to withdraw, I will omit.

Neither do I contend, but that this notion, which I call the freeing of a direction in the received philosophies, as far as a swimming anticipation could take hold, might be perceived and discerned; being not much other matter than that which they did not only aim at in the two rules of axioms before remembered, but more nearly also than that which they term the form or formal cause, or that which they call the true difference; both which, nevertheless, it seemeth they propound rather as impossibilities and wishes, than as things within the compass of human comprehension: for Plato casteth his burden, and saith, “that he will revere him as a God, that can truly divide and define:” which cannot be but by true forms and differences, wherein I join hands with him. confessing as much, as yet assuming to myself little; for if any man can, by the strength of His anticipations, find out forms, I will magnify him with the foremost. But as any of them would say, that if divers things, which many men know by instruction and observation, another knew by revelation, and without those means, they would take him for somewhat supernatural and divine; so I do acknowledge that if any man can by anticipations reach to that which a weak and inferior wit may attain to by interpretation, he cannot receive too high a title. Nay, I for my part do indeed admire to see how far some of them have proceeded by their anticipations; but how? it is as I wonder at some blind men, to see what shift they make without their eye-sight; thinking with myself that if I were blind, I could hardly do it. Again, Aristotle’s school confesseth, that there is no true knowledge but by causes, no true cause but the form, no true form

known except one, which they are pleased to allow; and therefore thus far their evidence standeth with us, that both hitherto there hath been nothing but a shadow of knowledge, and that we propound now that which is agreed to be worthiest to be sought, and hardest to be found. There wanteth now a part very necessary, not by way of supply, but by way of caution: for as it is seen for the most part, that the outward tokens and badge of excellency and perfection are more incident to things merely counterfeit, than to that which is true, but for a meaner and baser sort: as a dubline is more like a perfect ruby than a spinel, and a counterfeit angel is made more like a true angel, than if it were an angel coined of China gold; in like manner, the direction carrieth a resemblance of a true direction in verity and liberty, which indeed is no direction at all. For though your direction seem to be certain and free, by pointing you to nature that is unseparable from the nature you inquire upon; yet if it do not carry you on a degree or remove nearer to action, operation, or light, to make or produce, it is but superficial and counterfeit. Wherefore to secure and warrant what is a true direction, though that general note I have given be perspicuous in itself, for a man shall soon cast with himself, whether he be ever the near to effect and operate or no, or whether he have won but an abstract or varied notion, yet for better instruction I will deliver three particular notes of caution. The first is, that the nature discovered be more original than the nature supposed, and not more secondary or of the like degree; as to make a stone bright, or to make it smooth, it is a good direction to say make it even; but to make a stone even, it is no good direction to say, make it bright, or make it smooth; for the rule is, that the disposition of any thing referring to the state of it in itself, of the parts, is more original than that which is relative or transitive towards another thing. So evenness is the disposition of the stone in itself, but smooth is to the hand, and bright to the eye, and yet nevertheless they all cluster and concur; and yet the direction is more unperfect, if it do appoint you to such a relative, as is in the same kind, and not in a diverse. For in the direction, to produce brightness by smoothness, although properly it win no degree, and will never teach you any new particulars before unknown, yet by way of suggestion, or bringing to mind,

it may draw your consideration to some particulars known but not remembered; as you shall sooner remember some practical means of making smoothness, than if you had fixed your consideration only upon brightness; but if the direction had been to make brightness, by making reflection, as thus, make it such as you may see your face in it; this is merely secondary, and helpeth neither by way of informing, nor by way of suggesting. So if in the inquiry of whiteness you were directed to make such a colour as should be seen furthest in a dark light; here you are advanced nothing at all. For these kinds of natures are but proprieties, effects, circumstances, concurrences, or what else you shall like to call them, and not radical and formative natures towards the nature supposed. The second caution is, that the nature inquired be collected by division before composition, or to speak more properly, by composition subaltern, before you ascend to composition absolute, &c.

Of the internal and profound errors and superstitions in the nature of the mind, and of the four sorts of idols or fictions which offer themselves to the understanding in the inquisition of knowledge.
Being the XVIth chapter, and this a small fragment thereof, being a preface to the inward elenches of the mind.

The opinion of Epicurus, that the gods were of human shape, was rather justly derided than seriously confuted by the other sects, demanding whether every kind of sensible creature did not think their own figure fairest, as the horse, the bull, and the like, which found no beauty but in their own forms, as in appetite of lust appeared. And the heresy of the Anthropomorphites was ever censured for a gross conceit, bred in the obscure cells of solitary monks that never looked abroad. Again, the fable so well known of “Quis pinxit leonem,” doth set forth well, that there is an error of pride and partiality, as well as of custom and familiarity. The reflection also from glasses so usually resembled to the imagery of the mind, every man knoweth to receive error and variety both in colour,

magnitude, and shape, according to the quality of the glass. But yet no use hath been made of these and many the like observations to move men to search out, and upon search to give true cautions of the native and inherent errors in the mind of man, which have coloured and corrupted all his notions and impressions.

I do find therefore in this enchanted glass four idols, or false appearances of several and distinct sorts, every sort comprehending many subdivisions: the first sort, I call idols of the nation or tribe; the second, idols of the palace; the third, idols of the cave; and the fourth, idols of the theatre, &c.

Here followeth an abridgement of divers chapters of the first book of the Interpretation of Nature.

CHAPTER XII.

That in deciding and determining of the truth of knowledge, men have put themselves upon trials not competent. That antiquity and authority, common and confessed notions, the natural and yielding consent of the mind, the harmony and coherence of a knowledge in itself, the establishing of principles with the touch and reduction of other propositions unto them, inductions without instances contradictory and the report of the senses, are none of them absolute and infallible evidence of truth; and bring no security sufficient for effects and operations. That the discovery of new works or active directions not known before, is the only trial to be accepted of; and yet not that neither, in case where one particular giveth light to another; but where particulars induce an axiom or observation, which axiom found out discovereth and designeth new particulars. That the nature of this trial is not only upon the point, whether the knowledge be profitable or no, but even upon the points whether the knowledge be true or no. Not because you may always conclude, that the axiom which discovereth new instances is true; but contrariwise you may safely conclude, that if it discover not any new instance, it is in vain and untrue. That by new instances are not always to be understood new recipes, but new assignations; and of the diversity between these two. That the subtilty of words, arguments, notions, yea of the senses themselves, is but rude and gross in comparison of the subtilty of things. And of the slothful and flattering opinions of those which pretend to honour the mind of man in withdrawing and abstracting it from particulars; and of the inducements and motives whereupon such opinions have been conceived and received.

CHAPTER XIII.

Of the error in propounding chiefly the search of causes and productions of things concrete, which are infinite and transitory; and not of abstract natures, which are few and permanent. That these natures areas the alphabet or simple letters, whereof the variety of things consisteth; or as the colours mingled in the painter's shell, where with he is able to make infinite variety of faces or shapes. An enumeration of them according to popular note. That, at the first, one would conceive that in the schools by natural philosophy were meant the knowledge of the efficients ot things concrete; and by metaphysics the knowledge of the forms of natures simple; which is a good and fit division of knowledge: but upon examination there is no such matter by them intended. That the little inquiry into the production of simple natures, showeth well that works were not sought; because by the former knowledge some small and superficial deflexions from the ordinary generations and productions may be found out, but the discovery of all profound and radical alteration must arise out of the latter knowledge.

CHAPTER XIV.

Of the error in propounding the search of the materials, or dead beginnings or principles of things, and not the nature of motions, inclinations, and applications. That the whole scope of the former search is impertinent and vain; both because there are no such beginnings, and if there were, they could not be known. That the latter manner of search, which is all, they pass over compendiously and slightly as a bye matter. That the several conceits in that kind; as that the lively and moving beginnings of things should be shift or appetite of matter to privation; the spirit of the world, working in matter according to platform; the proceeding or fructifying of distinct kinds according to their proprieties; the intercourse of the elements by mediation of their common qualities; the appetite of like portions to unite themselves; amity and discord, or sympathy and antipathy; motion to the centre, with motion of stripe or press; the casual agitation, aggregation, and essays of the solid portions in the void space; motion of shuttings and openings; are all mere negations. And that the calculating and ordination of the true degrees, moments, limits and laws of motions and alterations, by means whereof all works and effects are produced, is a matter of a far other nature than to consist in such easy and wild generalities.

CHAPTER XV.

Of the great error of inquiring knowledge in anticipations. That I call anticipations, the voluntary collections that the mind maketh of knowledge which is every man's reason. That though this be a solemn thing, and serves the turn to negotiate between man and man, because of the conformity and participation of men's minds in the like errors yet towards inquiry of the truth of things and works it is of no value. That civil respects are a let that this pretended reason should not be so contemptibly spoken of as were fit and medicinable, in regard that hath been too much exalted and glorified, to the infinite detriment of man's estate. Of the nature of words, and their facility and aptness to cover and grace the defects of anticipations. That it is no marvel if these anticipations have brought forth such diversity and repugnance in opinions, theories or philosophies, as so many fable, of several arguments. That had not the nature of civil customs and government been in most times somewhat adverse to such innovations, though contemplative, there might have been and would have been many more. That the second school of the Academics and the sect of Pyrrho, or the considerers, that denied comprehension as the disabling man's knowledge, entertained in anticipations, is well to be allowed : but that they ought, when they had overthrown and purged the floor of the ruins, to have sought to build better in place. And more especially that they did unjustly and prejudicially, to charge the deceit upon the report of the senses, which admitteth very sparing remedy; being indeed to have been charged upon the anticipations of the mind, which admitteth a perfect remedy. That the information of the senses is sufficient, not because they err not, but because the use of the sense in discovering of knowledge is for the most part not immediate. So that it is the work, effect, or instance, that trieth the axiom, and the sense doth but try the work done or not done, being or not being. That the mind of man in collecting knowledge needeth great variety of helps, as well as the hand of man in manual and mechanical practices needeth great variety of instruments. And that it were a

poor work, that if instruments were removed men would overcome with their naked hands. And of the distinct points of want and insufficiency in the mind of man.

CHAPTER XVI.

That the mind of a man, as it is not a vessel of that content or receipt to comprehend knowledge without helps and supplies; so again it is not sincere, but of an ill and corrupt tincture. Of the inherent and profound errors and superstitions in the nature of the rnind, and of the four sorts of idols or false appearances that offer themselves to the understanding in the inquisition of knowledge; that is to say, the idols of the tribe, the idols of the palace, the idols of the cave, and the idols of the theatre: that these four, added to the incapacity of the mind, and the vanity and malignity of the affections, leave nothing but impotency and confusion. A recital of the particular kinds of these four idols, with some chosen examples of the opinions they have begot, such of them as have supplanted the state of knowledge most.

CHAPTER XVII.

Of the errors of such as have descended and applied themselves to experience, and attempted to induce knowledge upon particulars. That they have not had the resolution and strength of mind to free themselves wholly from anticipations, but have made a confusion and intermixture of anticipations and observations, and so vanished. That if any have had the strength of mind generally to purge away and discharge all anticipations; they have not had that greater and double strength and patience of mind, as well to repel new anticipations after the view and search of particulars, as to reject old which were in their mind before; but have from particulars and history flown up to principles without the mean degrees, and so framed all the middle generalities or axioms, not by way of scale or ascension from particulars, but by way of derivation from principles, whence hath issued the infinite chaos of shadows and moths, wherewith both books and minds have been hitherto, and may be yet hereafter much more pestered. That in the course of those derivations to make them yet the more unprofitable, they have used, when any light of new instance opposite to any assertion appeared, rather to reconcile the instance than to amend the rule. That if any have had, or shall have the power and resolution to fortify and inclose his mind against all anticipations, yet if he have not been or shall not be cautioned by the full understanding of the nature of the mind and spirit of man, and therein of the states, pores, and passages both of knowledge and error, he hath not been nor shall not be possibly able to guide or keep on his course aright. That those that have been conversant in experience and observation, have used, when they have intended to discover the cause of any effect, to fix their consideration narrowly and exactly upon that effect itself, with all the circumstances thereof, and to vary the trial thereof as many ways as can be devised; which course amounteth but to a tedious curiosity, and ever breaketh off in wondering and not in knowing. And that they have not used to enlarge their observation to match and sort that effect with instances of a diverse subject, which must of necessity be before any cause

be found out. That they have passed over the observation of instances vulgar and ignoble, and stayed their attention chiefly upon instances of mark: whereas the other sort are for the most part more significant, and of better light and information. That every particular that worketh any effect, is a thing compounded more or less, of diverse single natures, more manifest and more obscure, and that it appeareth not to whether of the natures the effect is to be ascribed; and yet notwithstanding they have taken a course without breaking particulars, and reducing them by exclusions and inclusions to a definite point, to conclude upon inductions in gross; which empirical course is no less vain than the scholastical. That all such as have sought action and work out of their inquiry, have been hasty and pressing to discover some practices for present use, and not to discover axioms, joining with them the new assignations as their sureties. That the forerunning of the mind to frame recipes upon axioms at the entrance, is like Atalanta's golden ball that hindereth and interrupteth the course; and is to be inhibited till you have ascended to a certain stage and degree of generalities; which forbearance will be liberally recompensed in the end; and that chance discovereth new inventions by one and one, but science by knots and clusters. That they have not collected sufficient quantity of particulars, nor them in sufficient certainty and subtilty, nor of all several kinds, nor with those advantages and discretions in the entry and sorting which are requisite; and of the weak manner of collecting natural history, which hath been used. Lastly, that they had no knowledge of the formulary of interpretation, the work whereof is to abridge experience, and to make things as certainly found out by axiom in short time, as by infinite experiences in ages.

CHAPTER XVIII.

{sc|That}} the cautels and devices put in practice in the delivery of knowledge for the covering and palliating of ignorance, and the gracing and overvaluing of that they utter, are without number, but none more bold and more hurtful than two: the one, that men have used of a few observations upon any subject to make a solemn and formal art; by filling it up with discourse, accommodating it with some circumstances and directions to practice, and digesting it into method, whereby men grow satisfied and secure, as if no more inquiry were to be made of that matter; the other, that men have used to discharge ignorance with credit, in defining all those effects which they cannot attain unto, to be out of the compass of art and human endeavour. That the very styles and forms of utterance are so many characters of imposture, some choosing a style of pugnacity and contention, some of satire and reprehension, some of plausible and tempting similitudes and examples, some of great words and high discourse, some of short and dark sentences, some of exactness of method, all of positive affirmation; without disclosing the true motives and proofs of their opinions, or free confessing their ignorance of doubts, except it be now and then for a grace, and in cunning to win the more credit in the rest, and not in good faith. That although men be free from these errors and incumbraaces in the will and affection, yet it is not a thing so easy as is conceived to convey the conceit of one man’s mind into the mind of another, without loss or mistaking, especially in notions new and differing from those that are received. That never any knowledge was delivered in the same order it was invented, no not in the mathematics, though it should seem otherwise in regard that the propositions placed last do use the propositions or grants placed first for their proof and demonstration. That there are firms and methods of tradition wholly distinct and differing, according to their ends whereto they are directed. That there are two ends of tradition of knowledge, the one to teach and instruct for use and practice, the other to impart or intimate for re-examination and progression.

That the former of these ends requireth a method not the same whereby it was invented and induced, but such as is most compendious and ready, whereby it may be used and applied. That the latter of the ends, which is where a knowledge is delivered to be continued and spun on by a succession of labours, requireth a method whereby it may be transposed to another in the same manner as it was collected, to the end it may be discerned both where the work is weak, and where it breaketh off. That this latter method is not only unfit for the former end, but also impossible for all knowledge gathered and insinuated by anticipations, because the mind working inwardly of itself, no man can give a just account how he came to that knowledge which he hath received, and that therefore this method is peculiar for knowledge gathered by interpretation. That the discretion anciently observed, though by the precedent of many vain persons and deceivers disgraced, of publishing part and reserving part to a private succession, and of publishing in a manner whereby it shall not be to the capacity nor taste of all, but shall as it were single and adopt his reader, is not to be kid aside, both for the avoiding of abuse in the excluded, and the strengthening of affection in the admitted. That there are other virtues of tradition, as that there be no occasion given to error, and that it carry a vigour to root and spread against the vanity of wits and injuries of time; all which, if they were ever due to any knowledge delivered, or if they were never due to any human knowledge heretofore delivered, yet are now due to the knowledge propounded.

CHAPTER XIX.

Of the impediments which have been in the affections, the principle whereof hath been despair or diffidence, and the strong apprehension of the difficulty, obscurity, and infiniteness which belongeth to the invention of knowledge, and that men have not known their own strength; and that the supposed difficulties and vastness of the work is rather in show and muster, than in state or substance, where the true way is taken. That this diffidence hath moved and caused some never to enter into search, and others, when they have been entered, either to give over, or to seek a more compendious course than can stand with the nature ot true search. That of those that have refused and prejudged inquiry, the more sober and grave sort of wits have depended upon authors and traditions, and the more vain and credulous resorted to revelation and intelligence with spirits and higher natures. That of those that have entered into search, some having fallen upon some conceits, which they after consider to be the same which they have found in former authors, have suddenly taken a persuasion that a man shall but with much labour incur and light upon the same inventions which he might, with ease receive from others, and that it is but a vanity and self-pleasing of the wit to go about again, as one that would rather have a flower of his own gathering, than much better gathered to his hand. That the same humour of sloth and diffidence suggesteth, that a man shall but revive some ancient opinion, which was long ago propounded, examined, and rejected. And that it is easy to err in conceit, that a man s observation or notion is the same with a former opinion, both because new conceits must of necessity be uttered in old words, and because upon true and erroneous grounds men may meet in consequence or conclusion, as several lines or circles that cut in some one point. That the greatest part of those that have descended into search have chosen for the most artificial and compendious course, to induce principles out of particulars, and to reduce all other propositions unto principles: and so, instead of the nearest way, have been led to no way or a mere labyrinth. That the two contemplative ways have some

resemblance with the old parable of the two moral ways, the one beginning with incertainty and difficulty, and ending in plainness and certainty; and the other beginning with show of plainness and certainty, and ending in difficulty and incertainty. Of the great and manifest error and untrue conceit or estimation of the infiniteness of particulars, whereas indeed all prolixity is in discourse and derivations; and of the infinite and most laborious expence of wit that hath been employed upon toys and matters of no fruit or value. That although the period of one age cannot advance men to the furthest point of interpretation of nature, except the work should be undertaken with greater helps than can be expected, yet it cannot fail in much less space of time to make return of many singular commodities towards the state and occasions of man's life. That there is less reason of distrust in the course of interpretation now propounded, than in any knowledge formerly delivered, because this course doth in sort equal men's wits, and leaveth no great advantage or pre-eminence to the perfect and excellent motions of the spirit. That to draw a straight line, or to make a circle perfect round by aim of hand only, there must be a great difference between an unsteady and unpractised hand, and a steady and practised; but to do it by rule or compass, it is much alike.

CHAPTER XXI.

Of the impediments which have been in the two extreme humours of admiration of antiquity and love of novelty; and again, of over-servile reverence, or over-light scorn of the opinions of others.

CHAPTER XXII.

Of the impediments which have been in the affection of pride, specially of one kind, which is the disdain of dwelling and being conversant much in experiences and particulars, especially such as are vulgar in occurrency, and base and ignoble in use. That besides certain higher mysteries of pride, generalities seem to have a dignity and solemnity, in that they do not put men in mind of their familiar actions, in that they have less affinity with arts mechanical and illiberal, in that they are not so subject to be controlled by persons of mean observation, in that they seem to teach men that they know not, and not refer them to that they know. All which conditions directly feeding the humour of pride, particulars do want. That the majesty of generalities, and the divine nature of the mind in taking them, if they be truly collected, and be indeed the direct reflexions of things, cannot be too much magnified. And that it is true, that interpretation is the very natural and direct intention, action, and progression of the understanding, delivered from impediments. And that all anticipation is but a deflexion or declination by accident.

CHAPTER XXV.

Of the impediments which have been in the state of heathen religion, and other superstitions and errors of religion. And that in the true religion there hath not, nor is any impediment, except it be by accident or intermixture of humour. That a religion which consisteth in rites and forms of adoration, and not in confessions and beliefs, is adverse to knowledge: because men having liberty to inquire and discourse of theology at pleasure, it cometh to pass that all inquisition of nature endeth and limiteth itself in such metaphysical or theological discourse; whereas if men's wits be shut out of that port, it turneth them again to discover, and so to seek reason of reason more deeply. And that such was the religion of the heathen. That a religion that is jealous of the variety of learning, discourse, opinions, and sects, as misdoubting it may shake the foundations, or that cherisheth devotion upon simplicity and ignorance, as ascribing ordinary effects to the immediate working of God, is adverse to knowledge. That such is the religion of the Turk, and such hath been the abuse of Christian religion at some several times, and in some several factions. And of the singular advantage which the Christian religion hath towards the furtherance of true knowledge, in that it excludeth and interdicteth human reason, whether by interpretation or anticipation, from examining or discussing of the mysteries and principles of faith.

CHAPTER XXVI.

Of the impediments which have been in the nature of society, and the policies of state. That there is no composition of estate or society, not order or quality of persons, which have not some point of contrariety towards true knowledge. That monarchies incline wits to profit and pleasure, and commonwealths to glory and vanity. That universities incline wits to sophistry and affectation; cloisters to fables and unprofitable subtilty; study at large to variety; and that it is hard to say, whether mixture of contemplations with an active life, or retiring wholly to contemplations, do disable and hinder the mind more.

The Advancement and Proficience of Learning Divine and Human

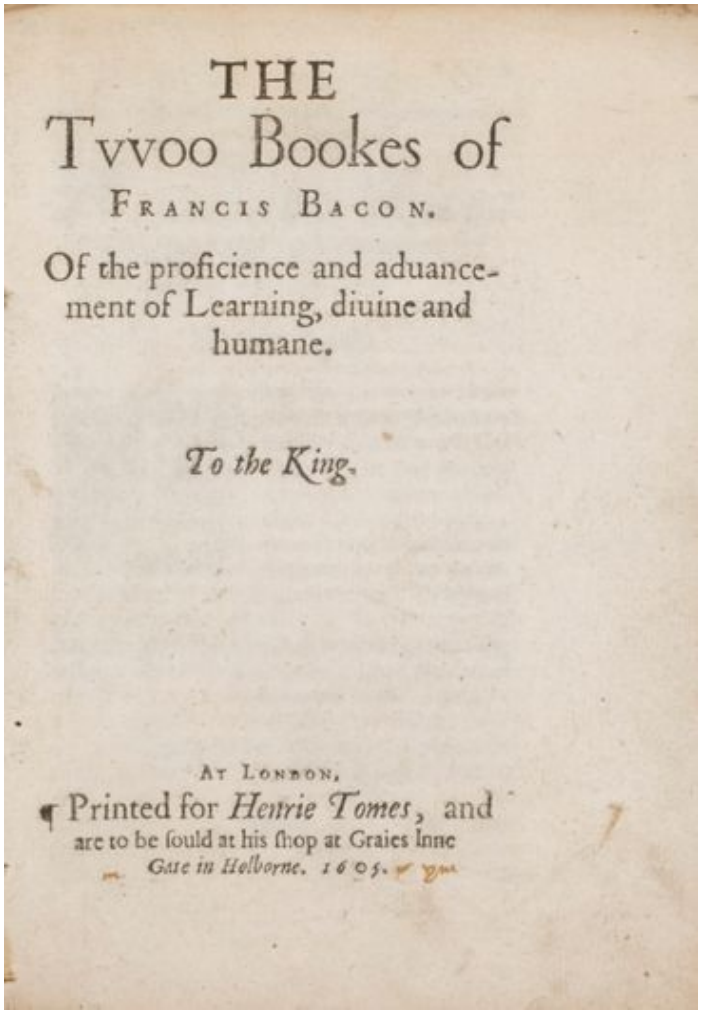
1893 EDITION

First published in 1605, this treatise inspired the taxonomic structure of the highly influential *Encyclopédie* by Jean le Rond d'Alembert and Denis Diderot and is credited as a pioneering essay in support of empirical philosophy. Bacon is best known for introducing the empirical (scientific) method during the Scientific Revolution, which he first outlined in *The Advancement of Learning*. Divided into two books, the work is addressed to King James I. The first book opens in praise of the King for his appreciation of knowledge. Bacon then outlines his own treatise on the 'excellency of learning and knowledge'. Bacon contradicts King Solomon, who argued that knowledge only increases anxiety, since it reveals to man his ignorance. Bacon explains the error of this opinion by explaining the difference between pure and proud knowledge.

Proud knowledge is the type of knowledge that caused man's fall from grace and leads to Atheism, according to Bacon. By contrast, pure knowledge about the natural world benefits man, inspiring wonder and a sense of awe in the vast mysteries of the universe. Pure learning inspires man to perpetually endeavour to understand the word of God, while also protecting him against conceit and sloth.

In the second book, Bacon outlines the three objects that constitute an act of merit toward learning: the places of learning, the books of learning and the persons of the learned. Places of learning include government buildings, while books of learning include libraries, which house the relics of the ancient saints and authored editions of knowledge. The persons of the learned include readers of the sciences and inquirers of knowledge. Bacon goes on to ask the King to support the sciences by providing financial support to libraries and research, both of which advance learning and benefit mankind. He outlines three different

fields of philosophy: divine philosophy (knowledge of God), natural philosophy (knowledge of the world) and human philosophy (knowledge of man). Each is a branch of the same tree, which is universal science or summary philosophy. Knowledge of the world is gathered from empirical observation. Bacon also introduces mathematics as a useful tool for learning the truths of the universe.



THE
Tvvoo Bookes of
FRANCIS BACON.
Of the proficience and aduance-
ment of Learning, diuine and
humane.

To the King.

AT LONDON,
Printed for *Henrie Tomes*, and
are to be ſould at his ſhop at Graies Inne
Gate in Holborne. 1605.

The first edition's title page

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Portrait of James I (1566-1625) after John de Critz, c. 1606

INTRODUCTION.

"The Tvvoo Bookes of Francis Bacon. Of the proficience and aduancement of Learning, divine and humane. To the King. At London. Printed for Henrie Tomes, and are to be sould at his shop at Graies Inne Gate in Holborne. 1605." That was the original title-page of the book now in the reader's hand — a living book that led the way to a new world of thought. It was the book in which Bacon, early in the reign of James the First, prepared the way for a full setting forth of his New Organon, or instrument of knowledge.

The Organon of Aristotle was a set of treatises in which Aristotle had written the doctrine of propositions. Study of these treatises was a chief occupation of young men when they passed from school to college, and proceeded from Grammar to Logic, the second of the Seven Sciences. Francis Bacon as a youth of sixteen, at Trinity College, Cambridge, felt the unfruitfulness of this method of search after truth. He was the son of Sir Nicholas Bacon, Queen Elizabeth's Lord Keeper, and was born at York House, in the Strand, on the 22nd of January, 1561. His mother was the Lord Keeper's second wife, one of two sisters, of whom the other married Sir William Cecil, afterwards Lord Burleigh. Sir Nicholas Bacon had six children by his former marriage, and by his second wife two sons, Antony and Francis, of whom Antony was about two years the elder. The family home was at York Place, and at Gorhambury, near St. Albans, from which town, in its ancient and its modern style, Bacon afterwards took his titles of Verulam and St. Albans.

Antony and Francis Bacon went together to Trinity College, Cambridge, when Antony was fourteen years old and Francis twelve. Francis remained at Cambridge only until his sixteenth year; and Dr. Rawley, his chaplain in after-years, reports of him that "whilst he was commorant in the University, about sixteen years of age (as his lordship hath been pleased to impart unto myself), he first fell into dislike of the philosophy of Aristotle; not for the worthlessness of the author, to whom he would ascribe all high attributes, but for the

unfruitfulness of the way, being a philosophy (as his lordship used to say) only strong for disputatious and contentions, but barren of the production of works for the benefit of the life of man; in which mind he continued to his dying day." Bacon was sent as a youth of sixteen to Paris with the ambassador Sir Amyas Paulet, to begin his training for the public service; but his father's death, in February, 1579, before he had completed the provision he was making for his youngest children, obliged him to return to London, and, at the age of eighteen, to settle down at Gray's Inn to the study of law as a profession. He was admitted to the outer bar in June, 1582, and about that time, at the age of twenty-one, wrote a sketch of his conception of a New Organon that should lead man to more fruitful knowledge, in a little Latin tract, which he called "Temporis Partus Maximus" ("The Greatest Birth of Time").

In November, 1584, Bacon took his seat in the House of Commons as member for Melcombe Regis, in Dorsetshire. In October, 1586, he sat for Taunton. He was member afterwards for Liverpool; and he was one of those who petitioned for the speedy execution of Mary Queen of Scots. In October, 1589, he obtained the reversion of the office of Clerk of the Council in the Star Chamber, which was worth £1,600 or £2,000 a year; but for the succession to this office he had to wait until 1608. It had not yet fallen to him when he wrote his "Two Books of the Advancement of Learning." In the Parliament that met in February, 1593, Bacon sat as member for Middlesex. He raised difficulties of procedure in the way of the grant of a treble subsidy, by just objection to the joining of the Lords with the Commons in a money grant, and a desire to extend the time allowed for payment from three years to six; it was, in fact, extended to four years. The Queen was offended. Francis Bacon and his brother Antony had attached themselves to the young Earl of Essex, who was their friend and patron. The office of Attorney-General became vacant. Essex asked the Queen to appoint Francis Bacon. The Queen gave the office to Sir Edward Coke, who was already Solicitor-General, and by nine years Bacon's senior. The office of Solicitor-General thus became vacant, and that was sought for Francis Bacon. The Queen, after delay and hesitation, gave it, in November, 1595, to Serjeant

Fleming. The Earl of Essex consoled his friend by giving him "a piece of land" — Twickenham Park — which Bacon afterwards sold for £1,800 — equal, say, to £12,000 in present buying power. In 1597 Bacon was returned to Parliament as member for Ipswich, and in that year he was hoping to marry the rich widow of Sir William Hatton, Essex helping; but the lady married, in the next year, Sir Edward Coke. It was in 1597 that Bacon published the First Edition of his Essays. That was a little book containing only ten essays in English, with twelve "Meditationes Sacræ," which were essays in Latin on religious subjects. From 1597 onward to the end of his life, Bacon's Essays were subject to continuous addition and revision. The author's Second Edition, in which the number of the Essays was increased from ten to thirty-eight, did not appear until November or December, 1612, seven years later than these two books on the "Advancement of Learning;" and the final edition of the Essays, in which their number was increased from thirty-eight to fifty-eight, appeared only in 1625; and Bacon died on the 9th of April, 1626. The edition of the Essays published in 1597, under Elizabeth, marked only the beginning of a course of thought that afterwards flowed in one stream with his teachings in philosophy.

In February, 1601, there was the rebellion of Essex. Francis Bacon had separated himself from his patron after giving him advice that was disregarded. Bacon, now Queen's Counsel, not only appeared against his old friend, but with excess of zeal, by which, perhaps, he hoped to win back the Queen's favour, he twice obtruded violent attacks upon Essex when he was not called upon to speak. On the 25th of February, 1601, Essex was beheaded. The genius of Bacon was next employed to justify that act by "A Declaration of the Practices and Treasons attempted and committed by Robert late Earle of Essex and his Complices." But James of Scotland, on whose behalf Essex had intervened, came to the throne by the death of Elizabeth on the 24th of March, 1603. Bacon was among the crowd of men who were made knights by James I., and he had to justify himself under the new order of things by writing "Sir Francis Bacon his Apologie in certain Imputations concerning the late Earle of Essex." He was returned to the first Parliament of James I. by Ipswich and St. Albans, and he

was confirmed in his office of King's Counsel in August, 1604; but he was not appointed to the office of Solicitor-General when it became vacant in that year.

That was the position of Francis Bacon in 1605, when he published this work, where in his First Book he pointed out the discredits of learning from human defects of the learned, and emptiness of many of the studies chosen, or the way of dealing with them. This came, he said, especially by the mistaking or misplacing of the last or furthest end of knowledge, as if there were sought in it "a couch whereupon to rest a searching and restless spirit; or a terrace for a wandering and variable mind to walk up and down with a fair prospect; or a tower of state for a proud mind to raise itself upon; or a fort or commanding ground for strife and contention; or a shop for profit or sale; and not a rich storehouse for the glory of the Creator and the relief of man's estate." The rest of the First Book was given to an argument upon the Dignity of Learning; and the Second Book, on the Advancement of Learning, is, as Bacon himself described it, "a general and faithful perambulation of learning, with an inquiry what parts thereof lie fresh and waste, and not improved and converted by the industry of man; to the end that such a plot made and recorded to memory may both minister light to any public designation and also serve to excite voluntary endeavours." Bacon makes, by a sort of exhaustive analysis, a ground-plan of all subjects of study, as an intellectual map, helping the right inquirer in his search for the right path. The right path is that by which he has the best chance of adding to the stock of knowledge in the world something worth labouring for; and the true worth is in labour for "the glory of the Creator and the relief of man's estate."

H. M.

THE FIRST BOOK OF FRANCIS BACON; OF THE PROFICIENCE AND ADVANCEMENT OF LEARNING, DIVINE AND HUMAN.

To the King.

There were under the law, excellent King, both daily sacrifices and freewill offerings; the one proceeding upon ordinary observance, the other upon a devout cheerfulness: in like manner there belongeth to kings from their servants both tribute of duty and presents of affection. In the former of these I hope I shall not live to be wanting, according to my most humble duty and the good pleasure of your Majesty's employments: for the latter, I thought it more respective to make choice of some oblation which might rather refer to the propriety and excellency of your individual person, than to the business of your crown and state.

Wherefore, representing your Majesty many times unto my mind, and beholding you not with the inquisitive eye of presumption, to discover that which the Scripture telleth me is inscrutable, but with the observant eye of duty and admiration, leaving aside the other parts of your virtue and fortune, I have been touched — yea, and possessed — with an extreme wonder at those your virtues and faculties, which the philosophers call intellectual; the largeness of your capacity, the faithfulness of your memory, the swiftness of your apprehension, the penetration of your judgment, and the facility and order of your elocution: and I have often thought that of all the persons living that I have known, your Majesty were the best instance to make a man of Plato's opinion, that all knowledge is but remembrance, and that the mind of man by Nature knoweth all things, and hath but her own native and original notions (which by the strangeness and darkness of this tabernacle of the body are sequestered) again revived and restored: such a light of Nature I have observed in your Majesty, and such a readiness to take flame and blaze from the least occasion presented, or the least spark of another's knowledge delivered. And as the

Scripture saith of the wisest king, "That his heart was as the sands of the sea;" which, though it be one of the largest bodies, yet it consisteth of the smallest and finest portions; so hath God given your Majesty a composition of understanding admirable, being able to compass and comprehend the greatest matters, and nevertheless to touch and apprehend the least; whereas it should seem an impossibility in Nature for the same instrument to make itself fit for great and small works. And for your gift of speech, I call to mind what Cornelius Tacitus saith of Augustus Cæsar: *Augusto profluens*, *et quæ principem deceret*, *eloquentia fuit*. For if we note it well, speech that is uttered with labour and difficulty, or speech that savoureth of the affectation of art and precepts, or speech that is framed after the imitation of some pattern of eloquence, though never so excellent; all this hath somewhat servile, and holding of the subject. But your Majesty's manner of speech is, indeed, prince-like, flowing as from a fountain, and yet streaming and branching itself into Nature's order, full of facility and felicity, imitating none, and inimitable by any. And as in your civil estate there appeareth to be an emulation and contention of your Majesty's virtue with your fortune; a virtuous disposition with a fortunate regiment; a virtuous expectation (when time was) of your greater fortune, with a prosperous possession thereof in the due time; a virtuous observation of the laws of marriage, with most blessed and happy fruit of marriage; a virtuous and most Christian desire of peace, with a fortunate inclination in your neighbour princes thereunto: so likewise in these intellectual matters there seemeth to be no less contention between the excellency of your Majesty's gifts of Nature and the universality and perfection of your learning. For I am well assured that this which I shall say is no amplification at all, but a positive and measured truth; which is, that there hath not been since Christ's time any king or temporal monarch which hath been so learned in all literature and erudition, divine and human. For let a man seriously and diligently revolve and peruse the succession of the Emperors of Rome, of which Cæsar the Dictator (who lived some years before Christ) and Marcus Antoninus were the best learned, and so descend to the Emperors of Græcia, or of the West, and then to the lines of France, Spain,

England, Scotland, and the rest, and he shall find this judgment is truly made. For it seemeth much in a king if, by the compendious extractions of other men's wits and labours, he can take hold of any superficial ornaments and shows of learning, or if he countenance and prefer learning and learned men; but to drink, indeed, of the true fountains of learning — nay, to have such a fountain of learning in himself, in a king, and in a king born — is almost a miracle. And the more, because there is met in your Majesty a rare conjunction, as well of divine and sacred literature as of profane and human; so as your Majesty standeth invested of that triplicity, which in great veneration was ascribed to the ancient Hermes: the power and fortune of a king, the knowledge and illumination of a priest, and the learning and universality of a philosopher. This propriety inherent and individual attribute in your Majesty deserveth to be expressed not only in the fame and admiration of the present time, nor in the history or tradition of the ages succeeding, but also in some solid work, fixed memorial, and immortal monument, bearing a character or signature both of the power of a king and the difference and perfection of such a king.

Therefore I did conclude with myself that I could not make unto your Majesty a better oblation than of some treatise tending to that end, whereof the sum will consist of these two parts: the former concerning the excellency of learning and knowledge, and the excellency of the merit and true glory in the augmentation and propagation thereof; the latter, what the particular acts and works are which have been embraced and undertaken for the advancement of learning; and again, what defects and undervalues I find in such particular acts: to the end that though I cannot positively or affirmatively advise your Majesty, or propound unto you framed particulars, yet I may excite your princely cogitations to visit the excellent treasure of your own mind, and thence to extract particulars for this purpose agreeable to your magnanimity and wisdom.

I. (1) In the entrance to the former of these — to clear the way and, as it were, to make silence, to have the true testimonies concerning the dignity of learning to be better heard, without the interruption of tacit objections — I think good to deliver it from the discredits and disgraces which it hath received, all from

ignorance, but ignorance severally disguised; appearing sometimes in the zeal and jealousy of divines, sometimes in the severity and arrogancy of politics, and sometimes in the errors and imperfections of learned men themselves.

(2) I hear the former sort say that knowledge is of those things which are to be accepted of with great limitation and caution; that the aspiring to overmuch knowledge was the original temptation and sin whereupon ensued the fall of man; that knowledge hath in it somewhat of the serpent, and, therefore, where it entereth into a man it makes him swell; *Scientia inflat*; that Solomon gives a censure, "That there is no end of making books, and that much reading is weariness of the flesh;" and again in another place, "That in spacious knowledge there is much contristation, and that he that increaseth knowledge increaseth anxiety;" that Saint Paul gives a caveat, "That we be not spoiled through vain philosophy;" that experience demonstrates how learned men have been arch-heretics, how learned times have been inclined to atheism, and how the contemplation of second causes doth derogate from our dependence upon God, who is the first cause.

(3) To discover, then, the ignorance and error of this opinion, and the misunderstanding in the grounds thereof, it may well appear these men do not observe or consider that it was not the pure knowledge of Nature and universality, a knowledge by the light whereof man did give names unto other creatures in Paradise as they were brought before him according unto their proprieties, which gave the occasion to the fall; but it was the proud knowledge of good and evil, with an intent in man to give law unto himself, and to depend no more upon God's commandments, which was the form of the temptation. Neither is it any quantity of knowledge, how great soever, that can make the mind of man to swell; for nothing can fill, much less extend the soul of man, but God and the contemplation of God; and, therefore, Solomon, speaking of the two principal senses of inquisition, the eye and the ear, affirmeth that the eye is never satisfied with seeing, nor the ear with hearing; and if there be no fulness, then is the continent greater than the content: so of knowledge itself and the mind of man, whereto the senses are but reporters, he defineth likewise in these words,

placed after that calendar or ephemerides which he maketh of the diversities of times and seasons for all actions and purposes, and concludeth thus: “God hath made all things beautiful, or decent, in the true return of their seasons. Also He hath placed the world in man’s heart, yet cannot man find out the work which God worketh from the beginning to the end” — declaring not obscurely that God hath framed the mind of man as a mirror or glass, capable of the image of the universal world, and joyful to receive the impression thereof, as the eye joyeth to receive light; and not only delighted in beholding the variety of things and vicissitude of times, but raised also to find out and discern the ordinances and decrees which throughout all those changes are infallibly observed. And although he doth insinuate that the supreme or summary law of Nature (which he calleth “the work which God worketh from the beginning to the end”) is not possible to be found out by man, yet that doth not derogate from the capacity of the mind; but may be referred to the impediments, as of shortness of life, ill conjunction of labours, ill tradition of knowledge over from hand to hand, and many other inconveniences, whereunto the condition of man is subject. For that nothing parcel of the world is denied to man’s inquiry and invention, he doth in another place rule over, when he saith, “The spirit of man is as the lamp of God, wherewith He searcheth the inwardness of all secrets.” If, then, such be the capacity and receipt of the mind of man, it is manifest that there is no danger at all in the proportion or quantity of knowledge, how large soever, lest it should make it swell or out-compass itself; no, but it is merely the quality of knowledge, which, be it in quantity more or less, if it be taken without the true corrective thereof, hath in it some nature of venom or malignity, and some effects of that venom, which is ventosity or swelling. This corrective spice, the mixture whereof maketh knowledge so sovereign, is charity, which the Apostle immediately addeth to the former clause; for so he saith, “Knowledge bloweth up, but charity buildeth up;” not unlike unto that which he deilvereth in another place: “If I spake,” saith he, “with the tongues of men and angels, and had not charity, it were but as a tinkling cymbal.” Not but that it is an excellent thing to speak with the tongues of men and angels, but because, if it be severed from

charity, and not referred to the good of men and mankind, it hath rather a sounding and unworthy glory than a meriting and substantial virtue. And as for that censure of Solomon concerning the excess of writing and reading books, and the anxiety of spirit which redoundeth from knowledge, and that admonition of St. Paul, "That we be not seduced by vain philosophy," let those places be rightly understood; and they do, indeed, excellently set forth the true bounds and limitations whereby human knowledge is confined and circumscribed, and yet without any such contracting or coarctation, but that it may comprehend all the universal nature of things; for these limitations are three: the first, "That we do not so place our felicity in knowledge, as we forget our mortality;" the second, "That we make application of our knowledge, to give ourselves repose and contentment, and not distaste or repining;" the third, "That we do not presume by the contemplation of Nature to attain to the mysteries of God." For as touching the first of these, Solomon doth excellently expound himself in another place of the same book, where he saith: "I saw well that knowledge recedeth as far from ignorance as light doth from darkness; and that the wise man's eyes keep watch in his head, whereas this fool roundeth about in darkness: but withal I learned that the same mortality involveth them both." And for the second, certain it is there is no vexation or anxiety of mind which resulteth from knowledge otherwise than merely by accident; for all knowledge and wonder (which is the seed of knowledge) is an impression of pleasure in itself; but when men fall to framing conclusions out of their knowledge, applying it to their particular, and ministering to themselves thereby weak fears or vast desires, there groweth that carefulness and trouble of mind which is spoken of; for then knowledge is no more *Lumen siccum*, whereof Heraclitus the profound said, *Lumen siccum optima anima*; but it becometh *Lumen madidum*, or *maceratum*, being steeped and infused in the humours of the affections. And as for the third point, it deserveth to be a little stood upon, and not to be lightly passed over; for if any man shall think by view and inquiry into these sensible and material things to attain that light, whereby he may reveal unto himself the nature or will of God, then, indeed, is he spoiled by vain philosophy; for the contemplation of

God's creatures and works produceth (having regard to the works and creatures themselves) knowledge, but having regard to God no perfect knowledge, but wonder, which is broken knowledge. And, therefore, it was most aptly said by one of Plato's school, "That the sense of man carrieth a resemblance with the sun, which (as we see) openeth and revealeth all the terrestrial globe; but then, again, it obscureth and concealeth the stars and celestial globe: so doth the sense discover natural things, but it darkeneth and shutteth up divine." And hence it is true that it hath proceeded, that divers great learned men have been heretical, whilst they have sought to fly up to the secrets of the Deity by this waxen wings of the senses. And as for the conceit that too much knowledge should incline a man to atheism, and that the ignorance of second causes should make a more devout dependence upon God, which is the first cause; first, it is good to ask the question which Job asked of his friends: "Will you lie for God, as one man will lie for another, to gratify him?" For certain it is that God worketh nothing in Nature but by second causes; and if they would have it otherwise believed, it is mere imposture, as it were in favour towards God, and nothing else but to offer to the Author of truth the unclean sacrifice of a lie. But further, it is an assured truth, and a conclusion of experience, that a little or superficial knowledge of philosophy may incline the mind of men to atheism, but a further proceeding therein doth bring the mind back again to religion. For in the entrance of philosophy, when the second causes, which are next unto the senses, do offer themselves to the mind of man, if it dwell and stay there it may induce some oblivion of the highest cause; but when a man passeth on further and seeth the dependence of causes and the works of Providence; then, according to the allegory of the poets, he will easily believe that the highest link of Nature's chain must needs he tied to the foot of Jupiter's chair. To conclude, therefore, let no man upon a weak conceit of sobriety or an ill-applied moderation think or maintain that a man can search too far, or be too well studied in the book of God's word, or in the book of God's works, divinity or philosophy; but rather let men endeavour an endless progress or proficience in both; only let men beware that they apply both to charity, and not to swelling; to use, and not to ostentation;

and again, that they do not unwisely mingle or confound these learnings together.

II. (1) And as for the disgraces which learning receiveth from politics, they be of this nature: that learning doth soften men's minds, and makes them more unapt for the honour and exercise of arms; that it doth mar and pervert men's dispositions for matter of government and policy, in making them too curious and irresolute by variety of reading, or too peremptory or positive by strictness of rules and axioms, or too immoderate and overweening by reason of the greatness of examples, or too incompatible and differing from the times by reason of the dissimilitude of examples; or at least, that it doth divert men's travails from action and business, and bringeth them to a love of leisure and privateness; and that it doth bring into states a relaxation of discipline, whilst every man is more ready to argue than to obey and execute. Out of this conceit Cato, surnamed the Censor, one of the wisest men indeed that ever lived, when Carneades the philosopher came in embassage to Rome, and that the young men of Rome began to flock about him, being allured with the sweetness and majesty of his eloquence and learning, gave counsel in open senate that they should give him his despatch with all speed, lest he should infect and enchant the minds and affections of the youth, and at unawares bring in an alteration of the manners and customs of the state. Out of the same conceit or humour did Virgil, turning his pen to the advantage of his country and the disadvantage of his own profession, make a kind of separation between policy and government, and between arts and sciences, in the verses so much renowned, attributing and challenging the one to the Romans, and leaving and yielding the other to the Grecians: *Tu regere imperio populos*, *Romane*, *memento*, *Hæ tibi erunt artes*, &c. So likewise we see that Anytus, the accuser of Socrates, laid it as an article of charge and accusation against him, that he did, with the variety and power of his discourses and disputatious, withdraw young men from due reverence to the laws and customs of their country, and that he did profess a dangerous and pernicious science, which was to make the worse matter seem the better, and to suppress truth by force of eloquence and speech.

(2) But these and the like imputations have rather a countenance of gravity than any ground of justice: for experience doth warrant that, both in persons and in times, there hath been a meeting and concurrence in learning and arms, flourishing and excelling in the same men and the same ages. For as 'for men, there cannot be a better nor the hike instance as of that pair, Alexander the Great and Julius Cæsar, the Dictator; whereof the one was Aristotle's scholar in philosophy, and the other was Cicero's rival in eloquence; or if any man had rather call for scholars that were great generals, than generals that were great scholars, let him take Epaminondas the Theban, or Xenophon the Athenian; whereof the one was the first that abated the power of Sparta, and the other was the first that made way to the overthrow of the monarchy of Persia. And this concurrence is yet more visible in times than in persons, by how much an age is greater object than a man. For both in Egypt, Assyria, Persia, Græcia, and Rome, the same times that are most renowned for arms are, likewise, most admired for learning, so that the greatest authors and philosophers, and the greatest captains and governors, have lived in the same ages. Neither can it otherwise he: for as in man the ripeness of strength of the body and mind cometh much about an age, save that the strength of the body cometh somewhat the more early, so in states, arms and learning, whereof the one correspondeth to the body, the other to the soul of man, have a concurrence or near sequence in times.

(3) And for matter of policy and government, that learning, should rather hurt, than enable thereunto, is a thing very improbable; we see it is accounted an error to commit a natural body to empiric physicians, which commonly have a few pleasing receipts whereupon they are confident and adventurous, but know neither the causes of diseases, nor the complexions of patients, nor peril of accidents, nor the true method of cures; we see it is a like error to rely upon advocates or lawyers which are only men of practice, and not grounded in their books, who are many times easily surprised when matter falleth out besides their experience, to the prejudice of the causes they handle: so by like reason it cannot be but a matter of doubtful consequence if states be managed by empiric statesmen, not well mingled with men grounded in learning. But contrariwise, it

is almost without instance contradictory that ever any government was disastrous that was in the hands of learned governors. For howsoever it hath been ordinary with politic men to extenuate and disable learned men by the names of *pedantes*; yet in the records of time it appeareth in many particulars that the governments of princes in minority (notwithstanding the infinite disadvantage of that kind of state) — have nevertheless excelled the government of princes of mature age, even for that reason which they seek to traduce, which is that by that occasion the state hath been in the hands of *pedantes*: for so was the state of Rome for the first five years, which are so much magnified, during the minority of Nero, in the hands of Seneca, a *pedenti*; so it was again, for ten years' space or more, during the minority of Gordianus the younger, with great applause and contentation in the hands of Misitheus, a *pedanti*: so was it before that, in the minority of Alexander Severus, in like happiness, in hands not much unlike, by reason of the rule of the women, who were aided by the teachers and preceptors. Nay, let a man look into the government of the Bishops of Rome, as by name, into the government of Pius Quintus and Sextus Quintus in our times, who were both at their entrance esteemed but as pedantical friars, and he shall find that such Popes do greater things, and proceed upon truer principles of state, than those which have ascended to the papacy from an education and breeding in affairs of state and courts of princes; for although men bred in learning are perhaps to seek in points of convenience and accommodating for the present, which the Italians call *ragioni di stato*, whereof the same Pius Quintus could not hear spoken with patience, terming them inventions against religion and the moral virtues; yet on the other side, to recompense that, they are perfect in those same plain grounds of religion, justice, honour, and moral virtue, which if they be well and watchfully pursued, there will be seldom use of those other, no more than of physic in a sound or well-dieted body. Neither can the experience of one man's life furnish examples and precedents for the event of one man's life. For as it happeneth sometimes that the grandchild, or other descendant, resembleth the ancestor more than the son; so many times occurrences of present times may sort better with ancient examples than with those of the later or immediate times; and

lastly, the wit of one man can no more countervail learning than one man's means can hold way with a common purse.

(4) And as for those particular seducements or indispositions of the mind for policy and government, which learning is pretended to insinuate; if it be granted that any such thing be, it must be remembered withal that learning ministereth in every of them greater strength of medicine or remedy than it offereth cause of indisposition or infirmity. For if by a secret operation it make men perplexed and irresolute, on the other side by plain precept it teacheth them when and upon what ground to resolve; yea, and how to carry things in suspense, without prejudice, till they resolve. If it make men positive and regular, it teacheth them what things are in their nature demonstrative, and what are conjectural, and as well the use of distinctions and exceptions, as the latitude of principles and rules. If it mislead by disproportion or dissimilitude of examples, it teacheth men the force of circumstances, the errors of comparisons, and all the cautions of application; so that in all these it doth rectify more effectually than it can pervert. And these medicines it conveyeth into men's minds much more forcibly by the quickness and penetration of examples. For let a man look into the errors of Clement VII., so lively described by Guicciardini, who served under him, or into the errors of Cicero, painted out by his own pencil in his Epistles to Atticus, and he will fly apace from being irresolute. Let him look into the errors of Phocion, and he will beware how he be obstinate or inflexible. Let him but read the fable of Ixion, and it will hold him from being vaporous or imaginative. Let him look into the errors of Cato II., and he will never be one of the Antipodes, to tread opposite to the present world.

(5) And for the conceit that learning should dispose men to leisure and privateness, and make men slothful: it were a strange thing if that which accustometh the mind to a perpetual motion and agitation should induce slothfulness, whereas, contrariwise, it may be truly affirmed that no kind of men love business for itself but those that are learned; for other persons love it for profit, as a hireling that loves the work for the wages; or for honour, as because it beareth them up in the eyes of men, and refresheth their reputation, which

otherwise would wear; or because it putteth them in mind of their fortune, and giveth them occasion to pleasure and displeasure; or because it exerciseth some faculty wherein they take pride, and so entertaineth them in good-humour and pleasing conceits towards themselves; or because it advanceth any other their ends. So that as it is said of untrue valours, that some men's valours are in the eyes of them that look on, so such men's industries are in the eyes of others, or, at least, in regard of their own designments; only learned men love business as an action according to nature, as agreeable to health of mind as exercise is to health of body, taking pleasure in the action itself, and not in the purchase, so that of all men they are the most indefatigable, if it be towards any business which can hold or detain their mind.

(6) And if any man be laborious in reading and study, and yet idle in business and action, it groweth from some weakness of body or softness of spirit, such as Seneca speaketh of: *Quidam tam sunt umbratiles*, *ut putent in turbido esse quicquid in luce est*; and not of learning: well may it be that such a point of a man's nature may make him give himself to learning, but it is not learning that breedeth any such point in his nature.

(7) And that learning should take up too much time or leisure: I answer, the most active or busy man that hath been or can be, hath (no question) many vacant times of leisure while he expecteth the tides and returns of business (except he be either tedious and of no despatch, or lightly and unworthily ambitious to meddle in things that may be better done by others), and then the question is but how those spaces and times of leisure shall be filled and spent; whether in pleasure or in studies; as was well answered by Demosthenes to his adversary Æschines, that was a man given to pleasure, and told him "That his orations did smell of the lamp." "Indeed," said Demosthenes, "there is a great difference between the things that you and I do by lamp-light." So as no man need doubt that learning will expel business, but rather it will keep and defend the possession of the mind against idleness and pleasure, which otherwise at unawares may enter to the prejudice of both.

(8) Again, for that other conceit that learning should undermine the reverence of laws and government, it is assuredly a mere depravation and calumny, without all shadow of truth. For to say that a blind custom of obedience should be a surer obligation than duty taught and understood, it is to affirm that a blind man may tread surer by a guide than a seeing man can by a light. And it is without all controversy that learning doth make the minds of men gentle, generous, manageable, and pliant to government; whereas ignorance makes them churlish, thwart, and mutinous: and the evidence of time doth clear this assertion, considering that the most barbarous, rude, and unlearned times have been most subject to tumults, seditious, and changes.

(9) And as to the judgment of Cato the Censor, he was well punished for his blasphemy against learning, in the same kind wherein he offended; for when he was past threescore years old, he was taken with an extreme desire to go to school again, and to learn the Greek tongue, to the end to peruse the Greek authors; which doth well demonstrate that his former censure of the Grecian learning was rather an affected gravity, than according to the inward sense of his own opinion. And as for Virgil's verses, though it pleased him to brave the world in taking to the Romans the art of empire, and leaving to others the arts of subjects, yet so much is manifest — that the Romans never ascended to that height of empire till the time they had ascended to the height of other arts. For in the time of the two first Cæsars, which had the art of government in greatest perfection, there lived the best poet, Virgilius Maro; the best historiographer, Titus Livius; the best antiquary, Marcus Varro; and the best or second orator, Marcus Cicero, that to the memory of man are known. As for the accusation of Socrates, the time must be remembered when it was prosecuted; which was under the Thirty Tyrants, the most base, bloody, and envious persons that have governed; which revolution of state was no sooner over but Socrates, whom they had made a person criminal, was made a person heroical, and his memory accumulate with honours divine and human; and those discourses of his which were then termed corrupting of manners, were after acknowledged for sovereign medicines of the mind and manners, and so have been received ever since till

this day. Let this, therefore, serve for answer to politiques, which in their humorous severity, or in their feigned gravity, have presumed to throw imputations upon learning; which redargution nevertheless (save that we know not whether our labours may extend to other ages) were not needful for the present, in regard of the love and reverence towards learning which the example and countenance of two so learned princes, Queen Elizabeth and your Majesty, being as Castor and Pollux, *lucida sidera*, stars of excellent light and most benign influence, hath wrought in all men of place and authority in our nation.

III. (1) Now therefore we come to that third sort of discredit or diminution of credit that groweth unto learning from learned men themselves, which commonly cleaveth fastest: it is either from their fortune, or from their manners, or from the nature of their studies. For the first, it is not in their power; and the second is accidental; the third only is proper to be handled: but because we are not in hand with true measure, but with popular estimation and conceit, it is not amiss to speak somewhat of the two former. The derogations therefore which grow to learning from the fortune or condition of learned men, are either in respect of scarcity of means, or in respect of privateness of life and meanness of employments.

(2) Concerning want, and that it is the case of learned men usually to begin with little, and not to grow rich so fast as other men, by reason they convert not their labours chiefly to lucre and increase, it were good to leave the commonplace in commendation of povery to some friar to handle, to whom much was attributed by Machiavel in this point when he said, "That the kingdom of the clergy had been long before at an end, if the reputation and reverence towards the poverty of friars had not borne out the scandal of the superfluities and excesses of bishops and prelates." So a man might say that the felicity and delicacy of princes and great persons had long since turned to rudeness and barbarism, if the poverty of learning had not kept up civility and honour of life; but without any such advantages, it is worthy the observation what a reverent and honoured thing poverty of fortune was for some ages in the Roman state, which nevertheless was a state without paradoxes. For we see what Titus Livius

saith in his introduction: *Cæterum aut me amor negotii suscepti fallit aut nulla unquam respublica nec major*, *nec sanctior*, *nec bonis exemplis ditior fuit*; *nec in quam tam sero avaritia luxuriaque immigraverint*; *nec ubi tantus ac tam diu paupertati ac parsimoniæ honos fuerit*. We see likewise, after that the state of Rome was not itself, but did degenerate, how that person that took upon him to be counsellor to Julius Cæsar after his victory where to begin his restoration of the state, maketh it of all points the most summary to take away the estimation of wealth: *Verum hæc et omnia mala pariter cum honore pecuniæ desinent*; *si neque magistratus*, *neque alia vulgo cupienda*, *venalia erunt*. To conclude this point: as it was truly said that *Paupertas est virtutis fortuna*, though sometimes it come from vice, so it may be fitly said that, though some times it may proceed from misgovernment and accident. Surely Solomon hath pronounced it both in censure, *Qui festinat ad divitias non erit insons*; and in precept, "Buy the truth, and sell it not; and so of wisdom and knowledge;" judging that means were to be spent upon learning, and not learning to be applied to means. And as for the privateness or obscureness (as it may be in vulgar estimation accounted) of life of contemplative men, it is a theme so common to extol a private life, not taxed with sensuality and sloth, in comparison and to the disadvantage of a civil life, for safety, liberty, pleasure, and dignity, or at least freedom from indignity, as no man handleth it but handleth it well; such a consonancy it hath to men's conceits in the expressing, and to men's consents in the allowing. This only I will add, that learned men forgotten in states and not living in the eyes of men, are like the images of Cassius and Brutus in the funeral of Junia, of which, not being represented as many others were, Tacitus saith, *Eo ipso præfulgebant quod non visebantur*.

(3) And for meanness of employment, that which is most traduced to contempt is that the government of youth is commonly allotted to them; which age, because it is the age of least authority, it is transferred to the disesteeming of those employments wherein youth is conversant, and which are conversant about youth. But how unjust this traducement is (if you will reduce things from popularity of opinion to measure of reason) may appear in that we see men are

more curious what they put into a new vessel than into a vessel seasoned; and what mould they lay about a young plant than about a plant corroborate; so as this weakest terms and times of all things use to have the best applications and helps. And will you hearken to the Hebrew rabbins? "Your young men shall see visions, and your old men shall dream dreams:" say they, youth is the worthier age, for that visions are nearer apparitions of God than dreams? And let it be noted that howsoever the condition of life of *pedantes* hath been scorned upon theatres, as the ape of tyranny; and that the modern looseness or negligence hath taken no due regard to the choice of schoolmasters and tutors; yet the ancient wisdom of the best times did always make a just complaint, that states were too busy with their laws and too negligent in point of education: which excellent part of ancient discipline hath been in some sort revived of late times by the colleges of the Jesuits; of whom, although in regard of their superstition I may say, *Quo meliores*, *eo deteriores*; yet in regard of this, and some other points concerning human learning and moral matters, I may say, as Agesilaus said to his enemy Pharnabazus, *Talis quum sis*, *utunam noster esses*. And that much touching the discredits drawn from the fortunes of learned men.

(4) As touching the manners of learned men, it is a thing personal and individual: and no doubt there be amongst them, as in other professions, of all temperatures: but yet so as it is not without truth which is said, that *Abeunt studua in mores*, studies have an influence and operation upon the manners of those that are conversant in them.

(5) But upon an attentive and indifferent review, I for my part cannot find any disgrace to learning can proceed from the manners of learned men; not inherent to them as they are learned; except it be a fault (which was the supposed fault of Demosthenes, Cicero, Cato II., Seneca, and many more) that because the times they read of are commonly better than the times they live in, and the duties taught better than the duties practised, they contend sometimes too far to bring things to perfection, and to reduce the corruption of manners to honesty of precepts or examples of too great height. And yet hereof they have caveats enough in their own walks. For Solon, when he was asked whether he had given

his citizens the best laws, answered wisely, "Yea, of such as they would receive:" and Plato, finding that his own heart could not agree with the corrupt manners of his country, refused to bear place or office, saying, "That a man's country was to be used as his parents were, that is, with humble persuasions, and not with contestations." And Cæsar's counsellor put in the same caveat, *Non ad vetera instituta revocans quæ jampridem corruptis moribus ludibrio sunt*; and Cicero noteth this error directly in Cato II. when he writes to his friend Atticus, *Cato optime sentit*, *sed nocet interdum reipublicæ*; *loquitur enim tanquam in republicâ Platonis*, *non tanquam in fæce Romuli*. And the same Cicero doth excuse and expound the philosophers for going too far and being too exact in their prescripts when he saith, *Isti ipse præceptores virtutis et magistri videntur fines officiorum paulo longius quam natura vellet protulisse*, *ut cum ad ultimum animo contendissemus*, *ibi tamen*, *ubi oportet*, *consisteremus*: and yet himself might have said, *Monitis sum minor ipse meis*; for it was his own fault, though not in so extreme a degree.

(6) Another fault likewise much of this kind hath been incident to learned men, which is, that they have esteemed the preservation, good, and honour of their countries or masters before their own fortunes or safeties. For so saith Demosthenes unto the Athenians: "If it please you to note it, my counsels unto you are not such whereby I should grow great amongst you, and you become little amongst the Grecians; but they be of that nature as they are sometimes not good for me to give, but are always good for you to follow." And so Seneca, after he had consecrated that *Quinquennium Neronis* to the eternal glory of learned governors, held on his honest and loyal course of good and free counsel after his master grew extremely corrupt in his government. Neither can this point otherwise be, for learning endueth men's minds with a true sense of the frailty of their persons, the casualty of their fortunes, and the dignity of their soul and vocation, so that it is impossible for them to esteem that any greatness of their own fortune can be a true or worthy end of their being and ordainment, and therefore are desirous to give their account to God, and so likewise to their masters under God (as kings and the states that they serve) in those words, *Ecce*

tibi lucrefeci, and not *Ecce mihi lucrefeci*; whereas the corrupter sort of mere politiques, that have not their thoughts established by learning in the love and apprehension of duty, nor never look abroad into universality, do refer all things to themselves, and thrust themselves into the centre of the world, as if all lines should meet in them and their fortunes, never caring in all tempests what becomes of the ship of state, so they may save themselves in the cockboat of their own fortune; whereas men that feel the weight of duty and know the limits of self-love use to make good their places and duties, though with peril; and if they stand in seditious and violent alterations, it is rather the reverence which many times both adverse parts do give to honesty, than any versatile advantage of their own carriage. But for this point of tender sense and fast obligation of duty which learning doth endue the mind withal, howsoever fortune may tax it, and many in the depth of their corrupt principles may despise it, yet it will receive an open allowance, and therefore needs the less disproof or excuse.

(7) Another fault incident commonly to learned men, which may be more properly defended than truly denied, is that they fail sometimes in applying themselves to particular persons, which want of exact application ariseth from two causes — the one, because the largeness of their mind can hardly confine itself to dwell in the exquisite observation or examination of the nature and customs of one person, for it is a speech for a lover, and not for a wise man, *Satis magnum alter alteri theatrum sumus*. Nevertheless I shall yield that he that cannot contract the sight of his mind as well as disperse and dilate it, wanteth a great faculty. But there is a second cause, which is no inability, but a rejection upon choice and judgment. For the honest and just bounds of observation by one person upon another extend no further but to understand him sufficiently, whereby not to give him offence, or whereby to be able to give him faithful counsel, or whereby to stand upon reasonable guard and caution in respect of a man's self. But to be speculative into another man to the end to know how to work him, or wind him, or govern him, proceedeth from a heart that is double and cloven, and not entire and ingenuous; which as in friendship it is want of integrity, so towards princes or superiors is want of duty. For the custom of the

Levant, which is that subjects do forbear to gaze or fix their eyes upon princes, is in the outward ceremony barbarous, but the moral is good; for men ought not, by cunning and bent observations, to pierce and penetrate into the hearts of kings, which the Scripture hath declared to be inscrutable.

(8) There is yet another fault (with which I will conclude this part) which is often noted in learned men, that they do many times fail to observe decency and discretion in their behaviour and carriage, and commit errors in small and ordinary points of action, so as the vulgar sort of capacities do make a judgment of them in greater matters by that which they find wanting in them in smaller. But this consequence doth oft deceive men, for which I do refer them over to that which was said by Themistocles, arrogantly and uncivilly being applied to himself out of his own mouth, but, being applied to the general state of this question, pertinently and justly, when, being invited to touch a lute, he said, "He could not fiddle, but he could make a small town a great state." So no doubt many may be well seen in the passages of government and policy which are to seek in little and punctual occasions. I refer them also to that which Plato said of his master Socrates, whom he compared to the gallipots of apothecaries, which on the outside had apes and owls and antiques, but contained within sovereign and precious liquors and confections; acknowledging that, to an external report, he was not without superficial levities and deformities, but was inwardly replenished with excellent virtues and powers. And so much touching the point of manners of learned men.

(9) But in the meantime I have no purpose to give allowance to some conditions and courses base and unworthy, wherein divers professors of learning have wronged themselves and gone too far; such as were those trencher philosophers which in the later age of the Roman state were usually in the houses of great persons, being little better than solemn parasites, of which kind, Lucian maketh a merry description of the philosopher that the great lady took to ride with her in her coach, and would needs have him carry her little dog, which he doing officiously and yet uncomely, the page scoffed and said, "That he doubted the philosopher of a Stoic would turn to be a Cynic." But, above all the

rest, this gross and palpable flattery whereunto many not unlearned have abased and abused their wits and pens, turning (as Du Bartas saith) Hecuba into Helena, and Faustina into Lucretia, hath most diminished the price and estimation of learning. Neither is the modern dedication of books and writings, as to patrons, to be commended, for that books (such as are worthy the name of books) ought to have no patrons but truth and reason. And the ancient custom was to dedicate them only to private and equal friends, or to entitle the books with their names; or if to kings and great persons, it was to some such as the argument of the book was fit and proper for; but these and the like courses may deserve rather reprehension than defence.

(10) Not that I can tax or condemn the morigeration or application of learned men to men in fortune. For the answer was good that Diogenes made to one that asked him in mockery, "How it came to pass that philosophers were the followers of rich men, and not rich men of philosophers?" He answered soberly, and yet sharply, "Because the one sort knew what they had need of, and the other did not." And of the like nature was the answer which Aristippus made, when having a petition to Dionysius, and no ear given to him, he fell down at his feet, whereupon Dionysius stayed and gave him the hearing, and granted it; and afterwards some person, tender on the behalf of philosophy, reproved Aristippus that he would offer the profession of philosophy such an indignity as for a private suit to fall at a tyrant's feet; but he answered, "It was not his fault, but it was the fault of Dionysius, that had his ears in his feet." Neither was it accounted weakness, but discretion, in him that would not dispute his best with Adrianus Cæsar, excusing himself, "That it was reason to yield to him that commanded thirty legions." These and the like, applications, and stooping to points of necessity and convenience, cannot be disallowed; for though they may have some outward baseness, yet in a judgment truly made they are to be accounted submissions to the occasion and not to the person.

IV. (1) Now I proceed to those errors and vanities which have intervened amongst the studies themselves of the learned, which is that which is principal and proper to the present argument; wherein my purpose is not to make a

justification of the errors, but by a censure and separation of the errors to make a justification of that which is good and sound, and to deliver that from the aspersion of the other. For we see that it is the manner of men to scandalise and deprave that which retaineth the state and virtue, by taking advantage upon that which is corrupt and degenerate, as the heathens in the primitive Church used to blemish and taint the Christians with the faults and corruptions of heretics. But nevertheless I have no meaning at this time to make any exact animadversion of the errors and impediments in matters of learning, which are more secret and remote from vulgar opinion, but only to speak unto such as do fall under or near unto a popular observation.

(2) There be therefore chiefly three vanities in studies, whereby learning hath been most traduced. For those things we do esteem vain which are either false or frivolous, those which either have no truth or no use; and those persons we esteem vain which are either credulous or curious; and curiosity is either in matter or words: so that in reason as well as in experience there fall out to be these three distempers (as I may term them) of learning — the first, fantastical learning; the second, contentious learning; and the last, delicate learning; vain imaginations, vain altercations, and vain affectations; and with the last I will begin. Martin Luther, conducted, no doubt, by a higher Providence, but in discourse of reason, finding what a province he had undertaken against the Bishop of Rome and the degenerate traditions of the Church, and finding his own solitude, being in nowise aided by the opinions of his own time, was enforced to awake all antiquity, and to call former times to his succours to make a party against the present time. So that the ancient authors, both in divinity and in humanity, which had long time slept in libraries, began generally to be read and revolved. This, by consequence, did draw on a necessity of a more exquisite travail in the languages original, wherein those authors did write, for the better understanding of those authors, and the better advantage of pressing and applying their words. And thereof grew, again, a delight in their manner of style and phrase, and an admiration of that kind of writing, which was much furthered and precipitated by the enmity and opposition that the propounders of those

primitive but seeming new opinions had against the schoolmen, who were generally of the contrary part, and whose writings were altogether in a differing style and form; taking liberty to coin and frame new terms of art to express their own sense, and to avoid circuit of speech, without regard to the pureness, pleasantness, and (as I may call it) lawfulness of the phrase or word. And again, because the great labour then was with the people (of whom the Pharisees were wont to say, *Execrabilis ista turba*, *quæ non novit legem*), for the winning and persuading of them, there grew of necessity in chief price and request eloquence and variety of discourse, as the fittest and forciblest access into the capacity of the vulgar sort; so that these four causes concurring — the admiration of ancient authors, the hate of the schoolmen, the exact study of languages, and the efficacy of preaching — did bring in an affectionate study of eloquence and copy of speech, which then began to flourish. This grew speedily to an excess; for men began to hunt more after words than matter — more after the choiceness of the phrase, and the round and clean composition of the sentence, and the sweet falling of the clauses, and the varying and illustration of their works with tropes and figures, than after the weight of matter, worth of subject, soundness of argument, life of invention, or depth of judgment. Then grew the flowing and watery vein of Osorius, the Portugal bishop, to be in price. Then did Sturmius spend such infinite and curious pains upon Cicero the Orator and Hermogenes the Rhetorician, besides his own books of Periods and Imitation, and the like. Then did Car of Cambridge and Ascham with their lectures and writings almost deify Cicero and Demosthenes, and allure all young men that were studious unto that delicate and polished kind of learning. Then did Erasmus take occasion to make the scoffing echo, *Decem annos consuumpsi in legendo Cicerone*; and the echo answered in Greek, *One*, *Asine*. Then grew the learning of the schoolmen to be utterly despised as barbarous. In sum, the whole inclination and bent of those times was rather towards copy than weight.

(3) Here therefore [is] the first distemper of learning, when men study words and not matter; whereof, though I have represented an example of late times, yet it hath been and will be *secundum majus et minus* in all time. And how is it

possible but this should have an operation to discredit learning, even with vulgar capacities, when they see learned men's works like the first letter of a patent or limited book, which though it hath large flourishes, yet it is but a letter? It seems to me that Pygmalion's frenzy is a good emblem or portraiture of this vanity; for words are but the images of matter, and except they have life of reason and invention, to fall in love with them is all one as to fall in love with a picture.

(4) But yet notwithstanding it is a thing not hastily to be condemned, to clothe and adorn the obscurity even of philosophy itself with sensible and plausible elocution. For hereof we have great examples in Xenophon, Cicero, Seneca, Plutarch, and of Plato also in some degree; and hereof likewise there is great use, for surely, to the severe inquisition of truth and the deep progress into philosophy, it is some hindrance because it is too early satisfactory to the mind of man, and quencheth the desire of further search before we come to a just period. But then if a man be to have any use of such knowledge in civil occasions, of conference, counsel, persuasion, discourse, or the like, then shall he find it prepared to his hands in those authors which write in that manner. But the excess of this is so justly contemptible, that as Hercules, when he saw the image of Adonis, Venus' minion, in a temple, said in disdain, *Nil sacri es*; so there is none of Hercules' followers in learning — that is, the more severe and laborious sort of inquirers into truth — but will despise those delicacies and affectations, as indeed capable of no divineness. And thus much of the first disease or distemper of learning.

(5) The second which followeth is in nature worse than the former: for as substance of matter is better than beauty of words, so contrariwise vain matter is worse than vain words: wherein it seemeth the reprehension of St. Paul was not only proper for those times, but prophetical for the times following; and not only respective to divinity, but extensive to all knowledge: *Devita profanas vocum novitates*, *et oppositiones falsi nominis scientiæ*. For he assigneth two marks and badges of suspected and falsified science: the one, the novelty and strangeness of terms; the other, the strictness of positions, which of necessity doth induce oppositions, and so questions and altercations. Surely, like as many substances

in nature which are solid do putrefy and corrupt into worms; — so it is the property of good and sound knowledge to putrefy and dissolve into a number of subtle, idle, unwholesome, and (as I may term them) vermiculate questions, which have indeed a kind of quickness and life of spirit, but no soundness of matter or goodness of quality. This kind of degenerate learning did chiefly reign amongst the schoolmen, who having sharp and strong wits, and abundance of leisure, and small variety of reading, but their wits being shut up in the cells of a few authors (chiefly Aristotle their dictator) as their persons were shut up in the cells of monasteries and colleges, and knowing little history, either of nature or time, did out of no great quantity of matter and infinite agitation of wit spin out unto us those laborious webs of learning which are extant in their books. For the wit and mind of man, if it work upon matter, which is the contemplation of the creatures of God, worketh according to the stuff and is limited thereby; but if it work upon itself, as the spider worketh his web, then it is endless, and brings forth indeed cobwebs of learning, admirable for the fineness of thread and work, but of no substance or profit.

(6) This same unprofitable subtility or curiosity is of two sorts: either in the subject itself that they handle, when it is a fruitless speculation or controversy (whereof there are no small number both in divinity and philosophy), or in the manner or method of handling of a knowledge, which amongst them was this — upon every particular position or assertion to frame objections, and to those objections, solutions; which solutions were for the most part not confutations, but distinctions: whereas indeed the strength of all sciences is, as the strength of the old man's faggot, in the bond. For the harmony of a science, supporting each part the other, is and ought to be the true and brief confutation and suppression of all the smaller sort of objections. But, on the other side, if you take out every axiom, as the sticks of the faggot, one by one, you may quarrel with them and bend them and break them at your pleasure: so that, as was said of Seneca, *Verborum minutiis rerum frangit pondera*, so a man may truly say of the schoolmen, *Quæstionum minutiis scientiarum frangunt soliditatem*. For were it not better for a man in fair room to set up one great light, or branching

candlestick of lights, than to go about with a small watch-candle into every corner? And such is their method, that rests not so much upon evidence of truth proved by arguments, authorities, similitudes, examples, as upon particular confutations and solutions of every scruple, cavillation, and objection; breeding for the most part one question as fast as it solveth another; even as in the former resemblance, when you carry the light into one corner, you darken the rest; so that the fable and fiction of Scylla seemeth to be a lively image of this kind of philosophy or knowledge; which was transformed into a comely virgin for the upper parts; but then *Candida succinctam latrantibus inguina monstris*: so the generalities of the schoolmen are for a while good and proportionable; but then when you descend into their distinctions and decisions, instead of a fruitful womb for the use and benefit of man's life, they end in monstrous altercations and barking questions. So as it is not possible but this quality of knowledge must fall under popular contempt, the people being apt to contemn truths upon occasion of controversies and altercations, and to think they are all out of their way which never meet; and when they see such digladiation about subtleties, and matters of no use or moment, they easily fall upon that judgment of Dionysius of Syracusa, *Verba ista sunt senum otiosorum*.

(7) Notwithstanding, certain it is that if those schoolmen to their great thirst of truth and unwearied travail of wit had joined variety and universality of reading and contemplation, they had proved excellent lights, to the great advancement of all learning and knowledge; but as they are, they are great undertakers indeed, and fierce with dark keeping. But as in the inquiry of the divine truth, their pride inclined to leave the oracle of God's word, and to vanish in the mixture of their own inventions; so in the inquisition of nature, they ever left the oracle of God's works, and adored the deceiving and deformed images which the unequal mirror of their own minds, or a few received authors or principles, did represent unto them. And thus much for the second disease of learning.

(8) For the third vice or disease of learning, which concerneth deceit or untruth, it is of all the rest the foulest; as that which doth destroy the essential

form of knowledge, which is nothing but a representation of truth: for the truth of being and the truth of knowing are one, differing no more than the direct beam and the beam reflected. This vice therefore brancheth itself into two sorts; delight in deceiving and aptness to be deceived; imposture and credulity; which, although they appear to be of a diverse nature, the one seeming to proceed of cunning and the other of simplicity, yet certainly they do for the most part concur: for, as the verse noteth —

"Percontatorem fugito, nam garrulus idem est,"

an inquisitive man is a prattler; so upon the like reason a credulous man is a deceiver: as we see it in fame, that he that will easily believe rumours will as easily augment rumours and add somewhat to them of his own; which Tacitus wisely noteth, when he saith, *Fingunt simul creduntque*: so great an affinity hath fiction and belief.

(9) This facility of credit and accepting or admitting things weakly authorised or warranted is of two kinds according to the subject: for it is either a belief of history, or, as the lawyers speak, matter of fact; or else of matter of art and opinion. As to the former, we see the experience and inconvenience of this error in ecclesiastical history; which hath too easily received and registered reports and narrations of miracles wrought by martyrs, hermits, or monks of the desert, and other holy men, and their relics, shrines, chapels and images: which though they had a passage for a time by the ignorance of the people, the superstitious simplicity of some and the politic toleration of others holding them but as divine poesies, yet after a period of time, when the mist began to clear up, they grew to be esteemed but as old wives' fables, impostures of the clergy, illusions of spirits, and badges of Antichrist, to the great scandal and detriment of religion.

(10) So in natural history, we see there hath not been that choice and judgment used as ought to have been; as may appear in the writings of Plinius, Cardanus, Albertus, and divers of the Arabians, being fraught with much fabulous matter, a great part not only untried, but notoriously untrue, to the great derogation of the credit of natural philosophy with the grave and sober kind of wits: wherein the wisdom and integrity of Aristotle is worthy to be observed,

that, having made so diligent and exquisite a history of living creatures, hath mingled it sparingly with any vain or feigned matter; and yet on the other side hath cast all prodigious narrations, which he thought worthy the recording, into one book, excellently discerning that matter of manifest truth, such whereupon observation and rule was to be built, was not to be mingled or weakened with matter of doubtful credit; and yet again, that rarities and reports that seem uncredible are not to be suppressed or denied to the memory of men.

(11) And as for the facility of credit which is yielded to arts and opinions, it is likewise of two kinds; either when too much belief is attributed to the arts themselves, or to certain authors in any art. The sciences themselves, which have had better intelligence and confederacy with the imagination of man than with his reason, are three in number: astrology, natural magic, and alchemy; of which sciences, nevertheless, the ends or pretences are noble. For astrology pretendeth to discover that correspondence or concatenation which is between the superior globe and the inferior; natural magic pretendeth to call and reduce natural philosophy from variety of speculations to the magnitude of works; and alchemy pretendeth to make separation of all the unlike parts of bodies which in mixtures of natures are incorporate. But the derivations and prosecutions to these ends, both in the theories and in the practices, are full of error and vanity; which the great professors themselves have sought to veil over and conceal by enigmatical writings, and referring themselves to auricular traditions and such other devices, to save the credit of impostures. And yet surely to alchemy this right is due, that it may be compared to the husbandman whereof Æsop makes the fable; that, when he died, told his sons that he had left unto them gold buried underground in his vineyard; and they digged over all the ground, and gold they found none; but by reason of their stirring and digging the mould about the roots of their vines, they had a great vintage the year following: so assuredly the search and stir to make gold hath brought to light a great number of good and fruitful inventions and experiments, as well for the disclosing of nature as for the use of man’s life.

(12) And as for the overmuch credit that hath been given unto authors in sciences, in making them dictators, that their words should stand, and not consuls, to give advice; the damage is infinite that sciences have received thereby, as the principal cause that hath kept them low at a stay without growth or advancement. For hence it hath come, that in arts mechanical the first deviser comes shortest, and time addeth and perfecteth; but in sciences the first author goeth furthest, and time leeseth and corrupteth. So we see artillery, sailing, printing, and the like, were grossly managed at the first, and by time accommodated and refined; but contrariwise, the philosophies and sciences of Aristotle, Plato, Democritus, Hippocrates, Euclides, Archimedes, of most vigour at the first, and by time degenerate and imbased: whereof the reason is no other, but that in the former many wits and industries have contributed in one; and in the latter many wits and industries have been spent about the wit of some one, whom many times they have rather depraved than illustrated; for, as water will not ascend higher than the level of the first spring-head from whence it descendeth, so knowledge derived from Aristotle, and exempted from liberty of examination, will not rise again higher than the knowledge of Aristotle. And, therefore, although the position be good, *Oportet discentem credere*, yet it must be coupled with this, *Oportet edoctum judicare*; for disciples do owe unto masters only a temporary belief and a suspension of their own judgment till they be fully instructed, and not an absolute resignation or perpetual captivity; and therefore, to conclude this point, I will say no more, but so let great authors have their due, as time, which is the author of authors, be not deprived of his due — which is, further and further to discover truth. Thus have I gone over these three diseases of learning; besides the which there are some other rather peccant humours than formed diseases, which, nevertheless, are not so secret and intrinsic, but that they fall under a popular observation and traducement, and, therefore, are not to be passed over.

V. (1) The first of these is the extreme affecting of two extremities: the one antiquity, the other novelty; wherein it seemeth the children of time do take after the nature and malice of the father. For as he devoureth his children, so one of

them seeketh to devour and suppress the other; while antiquity envieth there should be new additions, and novelty cannot be content to add but it must deface; surely the advice of the prophet is the true direction in this matter, *State super vias antiquas*, *et videte quœnam sit via recta et bona et ambulate in ea*. Antiquity deserveth that reverence, that men should make a stand thereupon and discover what is the best way; but when the discovery is well taken, then to make progression. And to speak truly, *Antiquitas sæculi juventus mundi*. These times are the ancient times, when the world is ancient, and not those which we account ancient *ordine retrogrado*, by a computation backward from ourselves.

(2) Another error induced by the former is a distrust that anything should be now to be found out, which the world should have missed and passed over so long time: as if the same objection were to be made to time that Lucian maketh to Jupiter and other the heathen gods; of which he wondereth that they begot so many children in old time, and begot none in his time; and asketh whether they were become septuagenary, or whether the law *Papia*, made against old men's marriages, had restrained them. So it seemeth men doubt lest time is become past children and generation; wherein contrariwise we see commonly the levity and unconstancy of men's judgments, which, till a matter be done, wonder that it can be done; and as soon as it is done, wonder again that it was no sooner done: as we see in the expedition of Alexander into Asia, which at first was prejudged as a vast and impossible enterprise; and yet afterwards it pleaseth Livy to make no more of it than this, *Nil aliud quàm bene ausus vana contemnere*. And the same happened to Columbus in the western navigation. But in intellectual matters it is much more common, as may be seen in most of the propositions of Euclid; which till they be demonstrate, they seem strange to our assent; but being demonstrate, our mind accepteth of them by a kind of relation (as the lawyers speak), as if we had known them before.

(3) Another error, that hath also some affinity with the former, is a conceit that of former opinions or sects after variety and examination the best hath still prevailed and suppressed the rest; so as if a man should begin the labour of a new search, he were but like to light upon somewhat formerly rejected, and by

rejection brought into oblivion; as if the multitude, or the wisest for the multitude's sake, were not ready to give passage rather to that which is popular and superficial than to that which is substantial and profound for the truth is, that time seemeth to be of the nature of a river or stream, which carrieth down to us that which is light and blown up, and sinketh and drowneth that which is weighty and solid.

(4) Another error, of a diverse nature from all the former, is the over-early and peremptory reduction of knowledge into arts and methods; from which time commonly sciences receive small or no augmentation. But as young men, when they knit and shape perfectly, do seldom grow to a further stature, so knowledge, while it is in aphorisms and observations, it is in growth; but when it once is comprehended in exact methods, it may, perchance, be further polished, and illustrate and accommodated for use and practice, but it increaseth no more in bulk and substance.

(5) Another error which doth succeed that which we last mentioned is, that after the distribution of particular arts and sciences, men have abandoned universality, or *philosophia prima*, which cannot but cease and stop all progression. For no perfect discovery can be made upon a flat or a level; neither is it possible to discover the more remote and deeper parts of any science if you stand but upon the level of the same science, and ascend not to a higher science.

(6) Another error hath proceeded from too great a reverence, and a kind of adoration of the mind and understanding of man; by means whereof, men have withdrawn themselves too much from the contemplation of nature, and the observations of experience, and have tumbled up and down in their own reason and conceits. Upon these intellectualists, which are notwithstanding commonly taken for the most sublime and divine philosophers, Heraclitus gave a just censure, saying:— "Men sought truth in their own little worlds, and not in the great and common world;" for they disdain to spell, and so by degrees to read in the volume of God's works; and contrariwise by continual meditation and agitation of wit do urge and, as it were, invocate their own spirits to divine and give oracles unto them, whereby they are deservedly deluded.

(7) Another error that hath some connection with this latter is, that men have used to infect their meditations, opinions, and doctrines with some conceits which they have most admired, or some sciences which they have most applied, and given all things else a tincture according to them, utterly untrue and improper. So hath Plato intermingled his philosophy with theology, and Aristotle with logic; and the second school of Plato, Proclus and the rest, with the mathematics; for these were the arts which had a kind of primogeniture with them severally. So have the alchemists made a philosophy out of a few experiments of the furnace; and Gilbertus our countryman hath made a philosophy out of the observations of a loadstone. So Cicero, when reciting the several opinions of the nature of the soul, he found a musician that held the soul was but a harmony, saith pleasantly, *Hic ab arte sua non recessit*, *&c.* But of these conceits Aristotle speaketh seriously and wisely when he saith, *Qui respiciunt ad pauca de facili pronunciant*.

(8) Another error is an impatience of doubt, and haste to assertion without due and mature suspension of judgment. For the two ways of contemplation are not unlike the two ways of action commonly spoken of by the ancients: the one plain and smooth in the beginning, and in the end impassable; the other rough and troublesome in the entrance, but after a while fair and even. So it is in contemplation: if a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties.

(9) Another error is in the manner of the tradition and delivery of knowledge, which is for the most part magistral and peremptory, and not ingenuous and faithful; in a sort as may be soonest believed, and not easiest examined. It is true, that in compendious treatises for practice that form is not to be disallowed; but in the true handling of knowledge men ought not to fall either on the one side into the vein of Velleius the Epicurean, *Nil tam metuens quam ne dubitare aliqua de revideretur*: nor, on the other side, into Socrates, his ironical doubting of all things; but to propound things sincerely with more or less asseveration, as they stand in a man's own judgment proved more or less.

(10) Other errors there are in the scope that men propound to themselves, whereunto they bend their endeavours; for, whereas the more constant and devote kind of professors of any science ought to propound to themselves to make some additions to their science, they convert their labours to aspire to certain second prizes: as to be a profound interpreter or commentor, to be a sharp champion or defender, to be a methodical compounder or abridger, and so the patrimony of knowledge cometh to be sometimes improved, but seldom augmented.

(11) But the greatest error of all the rest is the mistaking or misplacing of the last or furthest end of knowledge. For men have entered into a desire of learning and knowledge, sometimes upon a natural curiosity and inquisitive appetite; sometimes to entertain their minds with variety and delight; sometimes for ornament and reputation; and sometimes to enable them to victory of wit and contradiction; and most times for lucre and profession; and seldom sincerely to give a true account of their gift of reason to the benefit and use of men: as if there were sought in knowledge a couch whereupon to rest a searching and restless spirit; or a terrace for a wandering and variable mind to walk up and down with a fair prospect; or a tower of state, for a proud mind to raise itself upon; or a fort or commanding ground, for strife and contention; or a shop, for profit or sale; and not a rich storehouse for the glory of the Creator and the relief of man's estate. But this is that which will indeed dignify and exalt knowledge, if contemplation and action may be more nearly and straitly conjoined and united together than they have been: a conjunction like unto that of the two highest planets, Saturn, the planet of rest and contemplation; and Jupiter, the planet of civil society and action, howbeit, I do not mean, when I speak of use and action, that end before-mentioned of the applying of knowledge to lucre and profession; for I am not ignorant how much that diverteth and interrupteth the prosecution and advancement of knowledge, like unto the golden ball thrown before Atalanta, which, while she goeth aside and stoopeth to take up, the race is hindered,

"Declinat cursus, aurumque volubile tollit."

Neither is my meaning, as was spoken of Socrates, to call philosophy down from heaven to converse upon the earth — that is, to leave natural philosophy aside, and to apply knowledge only to manners and policy. But as both heaven and earth do conspire and contribute to the use and benefit of man, so the end ought to be, from both philosophies to separate and reject vain speculations, and whatsoever is empty and void, and to preserve and augment whatsoever is solid and fruitful; that knowledge may not be as a courtesan, for pleasure and vanity only, or as a bond-woman, to acquire and gain to her master's use; but as a spouse, for generation, fruit, and comfort.

(12) Thus have I described and opened, as by a kind of dissection, those peccant humours (the principal of them) which have not only given impediment to the proficience of learning, but have given also occasion to the traducement thereof: wherein, if I have been too plain, it must be remembered, *fidelia vulnera amantis*, *sed dolosa oscula malignantis*. This I think I have gained, that I ought to be the better believed in that which I shall say pertaining to commendation; because I have proceeded so freely in that which concerneth censure. And yet I have no purpose to enter into a laudative of learning, or to make a hymn to the Muses (though I am of opinion that it is long since their rites were duly celebrated), but my intent is, without varnish or amplification justly to weigh the dignity of knowledge in the balance with other things, and to take the true value thereof by testimonies and arguments, divine and human.

VI. (1) First, therefore, let us seek the dignity of knowledge in the archetype or first platform, which is in the attributes and acts of God, as far as they are revealed to man and may be observed with sobriety; wherein we may not seek it by the name of learning, for all learning is knowledge acquired, and all knowledge in God is original, and therefore we must look for it by another name, that of wisdom or sapience, as the Scriptures call it.

(2) It is so, then, that in the work of the creation we see a double emanation of virtue from God; the one referring more properly to power, the other to wisdom; the one expressed in making the subsistence of the matter, and the other in disposing the beauty of the form. This being supposed, it is to be observed that

for anything which appeareth in the history of the creation, the confused mass and matter of heaven and earth was made in a moment, and the order and disposition of that chaos or mass was the work of six days; such a note of difference it pleased God to put upon the works of power, and the works of wisdom; wherewith concurreth, that in the former it is not set down that God said, "Let there be heaven and earth," as it is set down of the works following; but actually, that God made heaven and earth: the one carrying the style of a manufacture, and the other of a law, decree, or counsel.

(3) To proceed, to that which is next in order from God, to spirits: we find, as far as credit is to be given to the celestial hierarchy of that supposed Dionysius, the senator of Athens, the first place or degree is given to the angels of love, which are termed seraphim; the second to the angels of light, which are termed cherubim; and the third, and so following places, to thrones, principalities, and the rest, which are all angels of power and ministry; so as this angels of knowledge and illumination are placed before the angels of office and domination.

(4) To descend from spirits and intellectual forms to sensible and material forms, we read the first form that was created was light, which hath a relation and correspondence in nature and corporal things to knowledge in spirits and incorporal things.

(5) So in the distribution of days we see the day wherein God did rest and contemplate His own works was blessed above all the days wherein He did effect and accomplish them.

(6) After the creation was finished, it is set down unto us that man was placed in the garden to work therein; which work, so appointed to him, could be no other than work of contemplation; that is, when the end of work is but for exercise and experiment, not for necessity; for there being then no reluctation of the creature, nor sweat of the brow, man's employment must of consequence have been matter of delight in the experiment, and not matter of labour for the use. Again, the first acts which man performed in Paradise consisted of the two summary parts of knowledge; the view of creatures, and the imposition of

names. As for the knowledge which induced the fall, it was, as was touched before, not the natural knowledge of creatures, but the moral knowledge of good and evil; wherein the supposition was, that God's commandments or prohibitions were not the originals of good and evil, but that they had other beginnings, which man aspired to know, to the end to make a total defection from God and to depend wholly upon himself.

(7) To pass on: in the first event or occurrence after the fall of man, we see (as the Scriptures have infinite mysteries, not violating at all the truth of this story or letter) an image of the two estates, the contemplative state and the active state, figured in the two persons of Abel and Cain, and in the two simplest and most primitive trades of life; that of the shepherd (who, by reason of his leisure, rest in a place, and lying in view of heaven, is a lively image of a contemplative life), and that of the husbandman, where we see again the favour and election of God went to the shepherd, and not to the tiller of the ground.

(8) So in the age before the flood, the holy records within those few memorials which are there entered and registered have vouchsafed to mention and honour the name of the inventors and authors of music and works in metal. In the age after the flood, the first great judgment of God upon the ambition of man was the confusion of tongues; whereby the open trade and intercourse of learning and knowledge was chiefly imbarred.

(9) To descend to Moses the lawgiver, and God's first pen: he is adorned by the Scriptures with this addition and commendation, "That he was seen in all the learning of the Egyptians," which nation we know was one of the most ancient schools of the world: for so Plato brings in the Egyptian priest saying unto Solon, "You Grecians are ever children; you have no knowledge of antiquity, nor antiquity of knowledge." Take a view of the ceremonial law of Moses; you shall find, besides the prefiguration of Christ, the badge or difference of the people of God, the exercise and impression of obedience, and other divine uses and fruits thereof, that some of the most learned Rabbins have travailed profitably and profoundly to observe, some of them a natural, some of them a moral sense, or reduction of many of the ceremonies and ordinances. As in the

law of the leprosy, where it is said, “If the whiteness have overspread the flesh, the patient may pass abroad for clean; but if there be any whole flesh remaining, he is to be shut up for unclean;” one of them noteth a principle of nature, that putrefaction is more contagious before maturity than after; and another noteth a position of moral philosophy, that men abandoned to vice do not so much corrupt manners, as those that are half good and half evil. So in this and very many other places in that law, there is to be found, besides the theological sense, much aspersion of philosophy.

(10) So likewise in that excellent hook of Job, if it be revolved with diligence, it will be found pregnant and swelling with natural philosophy; as for example, cosmography, and the roundness of the world, *Qui extendit aquilonem super vacuum*, *et appendit terram super nihilum*; wherein the pensileness of the earth, the pole of the north, and the finiteness or convexity of heaven are manifestly touched. So again, matter of astronomy: *Spiritus ejus ornavit cælos*, *et obstetricante manu ejus eductus est Coluber tortuoses*. And in another place, *Nunquid conjungere valebis micantes stellas Pleiadas*, *aut gyrum Arcturi poteris dissipare*? Where the fixing of the stars, ever standing at equal distance, is with great elegancy noted. And in another place, *Qui facit Arcturum*, *et Oriona*, *et Hyadas*, *et interiora Austri*; where again he takes knowledge of the depression of the southern pole, calling it the secrets of the south, because the southern stars were in that climate unseen. Matter of generation: *Annon sicut lac mulsisti me*, *et sicut caseum coagulasti me*? &c. Matter of minerals: *Habet argentum venarum suarum principia*; *et auro locus est in quo conflatur*, *ferrum de terra tollitur*, *et lapis solutus calore in æs vertitur*; and so forwards in that chapter.

(11) So likewise in the person of Solomon the king, we see the gift or endowment of wisdom and learning, both in Solomon’s petition and in God’s assent thereunto, preferred before all other terrene and temporal felicity. By virtue of which grant or donative of God Solomon became enabled not only to write those excellent parables or aphorisms concerning divine and moral philosophy, but also to compile a natural history of all verdure, from the cedar upon the mountain to the moss upon the wall (which is but a rudiment between

putrefaction and an herb), and also of all things that breathe or move. Nay, the same Solomon the king, although he excelled in the glory of treasure and magnificent buildings, of shipping and navigation, of service and attendance, of fame and renown, and the like, yet he maketh no claim to any of those glories, but only to the glory of inquisition of truth; for so he saith expressly, "The glory of God is to conceal a thing, but the glory of the king is to find it out;" as if, according to the innocent play of children, the Divine Majesty took delight to hide His works, to the end to have them found out; and as if kings could not obtain a greater honour than to be God's playfellows in that game; considering the great commandment of wits and means, whereby nothing needeth to be hidden from them.

(12) Neither did the dispensation of God vary in the times after our Saviour came into the world; for our Saviour himself did first show His power to subdue ignorance, by His conference with the priests and doctors of the law, before He showed His power to subdue nature by His miracles. And the coming of this Holy Spirit was chiefly figured and expressed in the similitude and gift of tongues, which are but *vehicula scientiæ*.

(13) So in the election of those instruments, which it pleased God to use for the plantation of the faith, notwithstanding that at the first He did employ persons altogether unlearned, otherwise than by inspiration, more evidently to declare His immediate working, and to abase all human wisdom or knowledge; yet nevertheless that counsel of His was no sooner performed, but in the next vicissitude and succession He did send His divine truth into the world, waited on with other learnings, as with servants or handmaids: for so we see St. Paul, who was only learned amongst the Apostles, had his pen most used in the Scriptures of the New Testament.

(14) So again we find that many of the ancient bishops and fathers of the Church were excellently read and studied in all the learning of this heathen; insomuch that the edict of the Emperor Julianus (whereby it was interdicted unto Christians to be admitted into schools, lectures, or exercises of learning) was esteemed and accounted a more pernicious engine and machination against the

Christian Faith than were all the sanguinary prosecutions of his predecessors; neither could the emulation and jealousy of Gregory, the first of that name, Bishop of Rome, ever obtain the opinion of piety or devotion; but contrariwise received the censure of humour, malignity, and pusillanimity, even amongst holy men; in that he designed to obliterate and extinguish the memory of heathen antiquity and authors. But contrariwise it was the Christian Church, which, amidst the inundations of the Scythians on the one side from the north-west, and the Saracens from the east, did preserve in the sacred lap and bosom thereof the precious relics even of heathen learning, which otherwise had been extinguished, as if no such thing had ever been.

(15) And we see before our eyes, that in the age of ourselves and our fathers, when it pleased God to call the Church of Rome to account for their degenerate manners and ceremonies, and sundry doctrines obnoxious and framed to uphold the same abuses; at one and the same time it was ordained by the Divine Providence that there should attend withal a renovation and new spring of all other knowledges. And on the other side we see the Jesuits, who partly in themselves, and partly by the emulation and provocation of their example, have much quickened and strengthened the state of learning; we see (I say) what notable service and reparation they have done to the Roman see.

(16) Wherefore, to conclude this part, let it be observed, that there be two principal duties and services, besides ornament and illustration, which philosophy and human learning do perform to faith and religion. The one, because they are an effectual inducement to the exaltation of the glory of God. For as the Psalms and other Scriptures do often invite us to consider and magnify the great and wonderful works of God, so if we should rest only in the contemplation of the exterior of them as they first offer themselves to our senses, we should do a like injury unto the majesty of God, as if we should judge or construe of the store of some excellent jeweller by that only which is set out toward the street in his shop. The other, because they minister a singular help and preservative against unbelief and error. For our Saviour saith, “You err, not knowing the Scriptures, nor the power of God;” laying before us two books or

volumes to study, if we will be secured from error: first the Scriptures, revealing the will of God, and then the creatures expressing His power; whereof the latter is a key unto the former: not only opening our understanding to conceive the true sense of the Scriptures by the general notions of reason and rules of speech, but chiefly opening our belief, in drawing us into a due meditation of the omnipotency of God, which is chiefly signed and engraven upon His works. Thus much therefore for divine testimony and evidence concerning the true dignity and value of learning.

VII. (1) As for human proofs, it is so large a field, as in a discourse of this nature and brevity it is fit rather to use choice of those things which we shall produce, than to embrace the variety of them. First, therefore, in the degrees of human honour amongst the heathen, it was the highest to obtain to a veneration and adoration as a God. This unto the Christians is as the forbidden fruit. But we speak now separately of human testimony, according to which — that which the Grecians call *apotheosis*, and the Latins *relatio inter divos* — was the supreme honour which man could attribute unto man, specially when it was given, not by a formal decree or act of state (as it was used among the Roman Emperors), but by an inward assent and belief. Which honour, being so high, had also a degree or middle term; for there were reckoned above human honours, honours heroical and divine: in the attribution and distribution of which honours we see antiquity made this difference; that whereas founders and uniters of states and cities, lawgivers, extirpers of tyrants, fathers of the people, and other eminent persons in civil merit, were honoured but with the titles of worthies or demigods, such as were Hercules, Theseus, Minus, Romulus, and the like; on the other side, such as were inventors and authors of new arts, endowments, and commodities towards man's life, were ever consecrated amongst the gods themselves, as was Ceres, Bacchus, Mercurius, Apollo, and others. And justly; for the merit of the former is confined within the circle of an age or a nation, and is like fruitful showers, which though they be profitable and good, yet serve but for that season, and for a latitude of ground where they fall; but the other is, indeed, like the benefits of heaven, which are permanent and universal. The

former again is mixed with strife and perturbation, but the latter hath the true character of Divine Presence, coming in *aura leni*, without noise or agitation.

(2) Neither is certainly that other merit of learning, in repressing the inconveniences which grow from man to man, much inferior to the former, of relieving the necessities which arise from nature, which merit was lively set forth by the ancients in that feigned relation of Orpheus' theatre, where all beasts and birds assembled, and, forgetting their several appetites — some of prey, some of game, some of quarrel — stood all sociably together listening unto the airs and accords of the harp, the sound whereof no sooner ceased, or was drowned by some louder noise, but every beast returned to his own nature; wherein is aptly described the nature and condition of men, who are full of savage and unreclaimed desires, of profit, of lust, of revenge; which as long as they give ear to precepts, to laws, to religion, sweetly touched with eloquence and persuasion of books, of sermons, of harangues, so long is society and peace maintained; but if these instruments be silent, or that sedition and tumult make them not audible, all things dissolve into anarchy and confusion.

(3) But this appeareth more manifestly when kings themselves, or persons of authority under them, or other governors in commonwealths and popular estates, are endued with learning. For although he might be thought partial to his own profession that said "Then should people and estates be happy when either kings were philosophers, or philosophers kings;" yet so much is verified by experience, that under learned princes and governors there have been ever the best times: for howsoever kings may have their imperfections in their passions and customs, yet, if they be illuminate by learning, they have those notions of religion, policy, and morality, which do preserve them and refrain them from all ruinous and peremptory errors and excesses, whispering evermore in their ears, when counsellors and servants stand mute and silent. And senators or counsellors, likewise, which be learned, to proceed upon more safe and substantial principles, than counsellors which are only men of experience; the one sort keeping dangers afar off, whereas the other discover them not till they come near hand, and then trust to the agility of their wit to ward or avoid them.

(4) Which felicity of times under learned princes (to keep still the law of brevity, by using the most eminent and selected examples) doth best appear in the age which passed from the death of Domitianus the emperor until the reign of Commodus; comprehending a succession of six princes, all learned, or singular favourers and advancers of learning, which age for temporal respects was the most happy and flourishing that ever the Roman Empire (which then was a model of the world) enjoyed — a matter revealed and prefigured unto Domitian in a dream the night before he was slain: for he thought there was grown behind upon his shoulders a neck and a head of gold, which came accordingly to pass in those golden times which succeeded; of which princes we will make some commemoration; wherein, although the matter will be vulgar, and may be thought fitter for a declamation than agreeable to a treatise infolded as this is, yet, because it is pertinent to the point in hand — *Neque semper arcum tendit Apollo* — and to name them only were too naked and cursory, I will not omit it altogether. The first was Nerva, the excellent temper of whose government is by a glance in Cornelius Tacitus touched to the life: *Postquam divus Nerva res oluim insociabiles miscuisset*, *imperium et libertatem*. And in token of his learning, the last act of his short reign left to memory was a missive to his adopted son, Trajan, proceeding upon some inward discontent at the ingratitude of the times, comprehended in a verse of Homer's —

"Telis, Phœbe, tuis, lacrymas ulciscere nostras."

(5) Trajan, who succeeded, was for his person not learned; but if we will hearken to the speech of our Saviour, that saith, "He that receiveth a prophet in the name of a prophet shall have a prophet's reward," he deserveth to be placed amongst the most learned princes; for there was not a greater admirer of learning or benefactor of learning, a founder of famous libraries, a perpetual advancer of learned men to office, and familiar converser with learned professors and preceptors who were noted to have then most credit in court. On the other side how much Trajan's virtue and government was admired and renowned, surely no testimony of grave and faithful history doth more lively set forth than that legend tale of Gregorius Magnum, Bishop of Rome, who was noted for the extreme

envy he bare towards all heathen excellency; and yet he is reported, out of the love and estimation of Trajan's moral virtues, to have made unto God passionate and fervent prayers for the delivery of his soul out of hell, and to have obtained it, with a caveat that he should make no more such petitions. In this prince's time also the persecutions against the Christians received intermission upon the certificate of Plinius Secundus, a man of excellent learning and by Trajan advanced.

(6) Adrian, his successor, was the most curious man that lived, and the most universal inquirer: insomuch as it was noted for an error in his mind that he desired to comprehend all things, and not to reserve himself for the worthiest things, falling into the like humour that was long before noted in Philip of Macedon, who, when he would needs overrule and put down an excellent musician in an argument touching music, was well answered by him again—"God forbid, sir," saith he, "that your fortune should be so bad as to know these things better than I." It pleased God likewise to use the curiosity of this emperor as an inducement to the peace of His Church in those days; for having Christ in veneration, not as a God or Saviour, but as a wonder or novelty, and having his picture in his gallery matched with Apollonius (with whom in his vain imagination he thought its had some conformity), yet it served the turn to allay the bitter hatred of those times against the Christian name, so as the Church had peace during his time. And for his government civil, although he did not attain to that of Trajan's in glory of arms or perfection of justice, yet in deserving of the weal of the subject he did exceed him. For Trajan erected many famous monuments and buildings, insomuch as Constantine the Great in emulation was wont to call him *Parietaria*, "wall-flower," because his name was upon so many walls; but his buildings and works were more of glory and triumph than use and necessity. But Adrian spent his whole reign, which was peaceable, in a perambulation or survey of the Roman Empire, giving order and making assignation where he went for re-edifying of cities, towns, and forts decayed, and for cutting of rivers and streams, and for making bridges and passages, and for policing of cities and commonalties with new ordinances and constitutions,

and granting new franchises and incorporations; so that his whole time was a very restoration of all the lapses and decays of former times.

(7) Antoninus Pius, who succeeded him, was a prince excellently learned, and had the patient and subtle wit of a schoolman, insomuch as in common speech (which leaves no virtue untaxed) he was called *Cymini Sector*, a carver or a divider of cummin seed, which is one of the least seeds. Such a patience he had and settled spirit to enter into the least and most exact differences of causes, a fruit no doubt of the exceeding tranquillity and serenity of his mind, which being no ways charged or encumbered, either with fears, remorses, or scruples, but having been noted for a man of the purest goodness, without all fiction or affectation, that hath reigned or lived, made his mind continually present and entire. He likewise approached a degree nearer unto Christianity, and became, as Agrippa said unto St. Paul, "half a Christian," holding their religion and law in good opinion, and not only ceasing persecution, but giving way to the advancement of Christians.

(5) There succeeded him the first *Divi fratres*, the two adoptive brethren — Lucius Commodus Verus, son to Ælius Verus, who delighted much in the softer kind of learning, and was wont to call the poet Martial his Virgil; and Marcus Aurelius Antoninus: whereof the latter, who obscured his colleague and survived him long, was named the "Philosopher," who, as he excelled all the rest in learning, so he excelled them likewise in perfection of all royal virtues; insomuch as Julianus the emperor, in his book entitled *Cærsares*, being as a pasquil or satire to deride all his predecessors, feigned that they were all invited to a banquet of the gods, and Silenus the jester sat at the nether end of the table and bestowed a scoff on everyone as they came in; but when Marcus Philosophus came in, Silenus was gravelled and out of countenance, not knowing where to carp at him, save at the last he gave a glance at his patience towards his wife. And the virtue of this prince, continued with that of his predecessor, made the name of Antoninus so sacred in the world, that though it were extremely dishonoured in Commodus, Caracalla, and Heliogabalus, who all bare the name, yet, when Alexander Severus refused the name because he was a

stranger to the family, the Senate with one acclamation said, *Quomodo Augustus*, *sic et Antoninus*. In such renown and veneration was the name of these two princes in those days, that they would have had it as a perpetual addition in all the emperors' style. In this emperor's time also the Church for the most part was in peace; so as in this sequence of six princes we do see the blessed effects of learning in sovereignty, painted forth in the greatest table of the world.

(9) But for a tablet or picture of smaller volume (not presuming to speak of your Majesty that liveth), in my judgment the most excellent is that of Queen Elizabeth, your immediate predecessor in this part of Britain; a prince that, if Plutarch were now alive to write lives by parallels, would trouble him, I think, to find for her a parallel amongst women. This lady was endued with learning in her sex singular, and rare even amongst masculine princes — whether we speak of learning, of language, or of science, modern or ancient, divinity or humanity — and unto the very last year of her life she accustomed to appoint set hours for reading, scarcely any young student in a university more daily or more duly. As for her government, I assure myself (I shall not exceed if I do affirm) that this part of the island never had forty-five years of better tines, and yet not through the calmness of the season, but through the wisdom of her regiment. For if there be considered, of the one side, the truth of religion established, the constant peace and security, the good administration of justice, the temperate use of the prerogative, not slackened, nor much strained; the flourishing state of learning, sortable to so excellent a patroness; the convenient estate of wealth and means, both of crown and subject; the habit of obedience, and the moderation of discontents; and there be considered, on the other side, the differences of religion, the troubles of neighbour countries, the ambition of Spain, and opposition of Rome, and then that she was solitary and of herself; these things, I say, considered, as I could not have chosen an instance so recent and so proper, so I suppose I could not have chosen one more remarkable or eminent to the purpose now in hand, which is concerning the conjunction of learning in the prince with felicity in the people.

(10) Neither hath learning an influence and operation only upon civil merit and moral virtue, and the arts or temperature of peace and peaceable government; but likewise it hath no less power and efficacy in enablement towards martial and military virtue and prowess, as may be notably represented in the examples of Alexander the Great and Cæsar the Dictator (mentioned before, but now in fit place to be resumed), of whose virtues and acts in war there needs no note or recital, having been the wonders of time in that kind; but of their affections towards learning and perfections in learning it is pertinent to say somewhat.

(11) Alexander was bred and taught under Aristotle, the great philosopher, who dedicated divers of his books of philosophy unto him; he was attended with Callisthenes and divers other learned persons, that followed him in camp, throughout his journeys and conquests. What price and estimation he had learning in doth notably appear in these three particulars: first, in the envy he used to express that he bare towards Achilles, in this, that he had so good a trumpet of his praises as Homer's verses; secondly, in the judgment or solution he gave touching that precious cabinet of Darius, which was found among his jewels (whereof question was made what thing was worthy to be put into it, and he gave his opinion for Homer's works); thirdly, in his letter to Aristotle, after he had set forth his books of nature, wherein he expostulateth with him for publishing the secrets or mysteries of philosophy; and gave him to understand that himself esteemed it more to excel other men in learning and knowledge than in power and empire. And what use he had of learning doth appear, or rather shine, in all his speeches and answers, being full of science and use of science, and that in all variety.

(12) And herein again it may seem a thing scholastical, and somewhat idle to recite things that every man knoweth; but yet, since the argument I handle leadeth me thereunto, I am glad that men shall perceive I am as willing to flatter (if they will so call it) an Alexander, or a Cæsar, or an Antoninus, that are dead many hundred years since, as any that now liveth; for it is the displaying of the glory of learning in sovereignty that I propound to myself, and not a humour of

declaiming in any man's praises. Observe, then, the speech he used of Diogenes, and see if it tend not to the true state of one of the greatest questions of moral philosophy: whether the enjoying of outward things, or the contemning of them, be the greatest happiness; for when he saw Diogenes so perfectly contented with so little, he said to those that mocked at his condition, "were I not Alexander, I would wish to be Diogenes." But Seneca inverteth it, and saith, "*Plus erat*, *quod hic nollet accipere*, *quàm quod ille posset dare*." There were more things which Diogenes would have refused than those were which Alexander could have given or enjoyed.

(13) Observe, again, that speech which was usual with him,— "That he felt his mortality chiefly in two things, sleep and lust;" and see if it were not a speech extracted out of the depth of natural philosophy, and liker to have come out of the mouth of Aristotle or Democritus than from Alexander.

(14) See, again, that speech of humanity and poesy, when, upon the bleeding of his wounds, he called unto him one of his flatterers, that was wont to ascribe to him divine honour, and said, "Look, this is very blood; this is not such a liquor as Homer speaketh of, which ran from Venus' hand when it was pierced by Diomedes."

(15) See likewise his readiness in reprehension of logic in the speech he used to Cassander, upon a complaint that was made against his father Antipater; for when Alexander happened to say, "Do you think these men would have come from so far to complain except they had just cause of grief?" and Cassander answered, "Yea, that was the matter, because they thought they should not be disproved;" said Alexander, laughing, "See the subtleties of Aristotle, to take a matter both ways, *pro et contra*, &c."

(16) But note, again, how well he could use the same art which he reprehended to serve his own humour: when bearing a secret grudge to Callisthenes, because he was against the new ceremony of his adoration, feasting one night where the same Callisthenes was at the table, it was moved by some after supper, for entertainment sake, that Callisthenes, who was an eloquent man, might speak of some theme or purpose at his own choice; which Callisthenes

did, choosing the praise of the Macedonian nation for his discourse, and performing the same with so good manner as the hearers were much ravished; whereupon Alexander, nothing pleased, said, “It was easy to be eloquent upon so good a subject; but,” saith he, “turn your style, and let us hear what you can say against us;” which Callisthenes presently undertook, and did with that sting and life that Alexander interrupted him, and said, “The goodness of the cause made him eloquent before, and despite made him eloquent then again.”

(17) Consider further, for tropes of rhetoric, that excellent use of a metaphor or translation, wherewith he taxeth Antipater, who was an imperious and tyrannous governor; for when one of Antipater’s friends commended him to Alexander for his moderation, that he did not degenerate as his other lieutenants did into the Persian pride, in uses of purple, but kept the ancient habit of Macedon, of black. “True,” saith Alexander; “but Antipater is all purple within.” Or that other, when Parmenio came to him in the plain of Arbela and showed him the innumerable multitude of his enemies, specially as they appeared by the infinite number of lights as it had been a new firmament of stars, and thereupon advised him to assail them by night; whereupon he answered, “That he would not steal the victory.”

(18) For matter of policy, weigh that significant distinction, so much in all ages embraced, that he made between his two friends Hephæstion and Craterus, when he said, “That the one loved Alexander, and the other loved the king:” describing the principal difference of princes’ best servants, that some in affection love their person, and other in duty love their crown.

(19) Weigh also that excellent taxation of an error, ordinary with counsellors of princes, that they counsel their masters according to the model of their own mind and fortune, and not of their masters. When upon Darius’ great offers Parmenio had said, “Surely I would accept these offers were I as Alexander;” saith Alexander, “So would I were I as Parmenio.”

(20) Lastly, weigh that quick and acute reply which he made when he gave so large gifts to his friends and servants, and was asked what he did reserve for himself, and he answered, “Hope.” Weigh, I say, whether he had not cast up his

account aright, because *hope* must be the portion of all that resolve upon great enterprises; for this was Cæsar's portion when he went first into Gaul, his estate being then utterly overthrown with largesses. And this was likewise the portion of that noble prince, howsoever transported with ambition, Henry Duke of Guise, of whom it was usually said that he was the greatest usurer in France, because he had turned all his estate into obligations.

(21) To conclude, therefore, as certain critics are used to say hyperbolically, "That if all sciences were lost they might be found in Virgil," so certainly this may be said truly, there are the prints and footsteps of learning in those few speeches which are reported of this prince, the admiration of whom, when I consider him not as Alexander the Great, but as Aristotle's scholar, hath carried me too far.

(22) As for Julius Cæsar, the excellency of his learning needeth not to be argued from his education, or his company, or his speeches; but in a further degree doth declare itself in his writings and works: whereof some are extant and permanent, and some unfortunately perished. For first, we see there is left unto us that excellent history of his own wars, which he entitled only a Commentary, wherein all succeeding times have admired the solid weight of matter, and the real passages and lively images of actions and persons, expressed in the greatest propriety of words and perspicuity of narration that ever was; which that it was not the effect of a natural gift, but of learning and precept, is well witnessed by that work of his entitled *De Analogia*, being a grammatical philosophy, wherein he did labour to make this same *Vox ad placitum* to become *Vox ad licitum*, and to reduce custom of speech to congruity of speech; and took as it were the pictures of words from the life of reason.

(23) So we receive from him, as a monument both of his power and learning, the then reformed computation of the year; well expressing that he took it to be as great a glory to himself to observe and know the law of the heavens, as to give law to men upon the earth.

(24) So likewise in that book of his, *Anti-Cato*, it may easily appear that he did aspire as well to victory of wit as victory of war: undertaking therein a

conflict against the greatest champion with the pen that then lived, Cicero the orator.

(25) So, again, in his book of Apophthegms, which he collected, we see that he esteemed it more honour to make himself but a pair of tables, to take the wise and pithy words of others, than to have every word of his own to be made an apophthegm or an oracle, as vain princes, by custom of flattery, pretend to do. And yet if I should enumerate divers of his speeches, as I did those of Alexander, they are truly such as Solomon noteth, when he saith, *Verba sapientum tanquam aculei*, *et tanquam clavi in altum defixi*: whereof I will only recite three, not so delectable for elegancy, but admirable for vigour and efficacy.

(26) As first, it is reason he be thought a master of words, that could with one word appease a mutiny in his army, which was thus: The Romans, when their generals did speak to their army, did use the word *Milites*, but when the magistrates spake to the people they did use the word *Quirites*. The soldiers were in tumult, and seditiously prayed to be cashiered; not that they so meant, but by expostulation thereof to draw Cæsar to other conditions; wherein he being resolute not to give way, after some silence, he began his speech, *Ego Quirites*, which did admit them already cashiered — wherewith they were so surprised, crossed, and confused, as they would not suffer him to go on in his speech, but relinquished their demands, and made it their suit to be again called by the name of *Milites*.

(27) The second speech was thus: Cæsar did extremely affect the name of king; and some were set on as he passed by in popular acclamation to salute him king. Whereupon, finding the cry weak and poor, he put it off thus, in a kind of jest, as if they had mistaken his surname: *Non Rex sum*, *sed Cæsar*; a speech that, if it be searched, the life and fulness of it can scarce be expressed. For, first, it was a refusal of the name, but yet not serious; again, it did signify an infinite confidence and magnanimity, as if he presumed Cæsar was the greater title, as by his worthiness it is come to pass till this day. But chiefly it was a speech of great allurement toward his own purpose, as if the state did strive with

him but for a name, whereof mean families were vested; for *Rex* was a surname with the Romans, as well as *King* is with us.

(28) The last speech which I will mention was used to Metellus, when Cæsar, after war declared, did possess himself of this city of Rome; at which time, entering into the inner treasury to take the money there accumulate, Metellus, being tribune, forbade him. Whereto Cæsar said, "That if he did not desist, he would lay him dead in the place." And presently taking himself up, he added, "Young man, it is harder for me to speak it than to do it — *Adolescens*, *durius est mihi hoc dicere quàm facere*." A speech compounded of the greatest terror and greatest clemency that could proceed out of the mouth of man.

(29) But to return and conclude with him, it is evident himself knew well his own perfection in learning, and took it upon him, as appeared when upon occasion that some spake what a strange resolution it was in Lucius Sylla to resign his dictators, he, scoffing at him to his own advantage, answered, "That Sylla could not skill of letters, and therefore knew not how to dictate."

(30) And here it were fit to leave this point, touching the concurrence of military virtue and learning (for what example should come with any grace after those two of Alexander and Cæsar?), were it not in regard of the rareness of circumstance, that I find in one other particular, as that which did so suddenly pass from extreme scorn to extreme wonder: and it is of Xenophon the philosopher, who went from Socrates' school into Asia in the expedition of Cyrus the younger against King Artaxerxes. This Xenophon at that time was very young, and never had seen the wars before, neither had any command in the army, but only followed the war as a voluntary, for the love and conversation of Proxenus, his friend. He was present when Falinus came in message from the great king to the Grecians, after that Cyrus was slain in the field, and they, a handful of men, left to themselves in the midst of the king's territories, cut off from their country by many navigable rivers and many hundred miles. The message imported that they should deliver up their arms and submit themselves to the king's mercy. To which message, before answer was made, divers of the army conferred familiarly with Falinus; and amongst the rest Xenophon

happened to say, “Why, Falinus, we have now but these two things left, our arms and our virtue; and if we yield up our arms, how shall we make use of our virtue?” Whereto Falinus, smiling on him, said, “If I be not deceived, young gentleman, you are an Athenian, and I believe you study philosophy, and it is pretty that you say; but you are much abused if you think your virtue can withstand the king’s power.” Here was the scorn; the wonder followed: which was that this young scholar or philosopher, after all the captains were murdered in parley by treason, conducted those ten thousand foot, through the heart of all the king’s high countries, from Babylon to Græcia in safety, in despite of all the king’s forces, to the astonishment of the world, and the encouragement of the Grecians in times succeeding to make invasion upon the kings of Persia, as was after purposed by Jason the Thessalian, attempted by Agesilaus the Spartan, and achieved by Alexander the Macedonian, all upon the ground of the act of that young scholar.

VIII. (1) To proceed now from imperial and military virtue to moral and private virtue; first, it is an assured truth, which is contained in the verses: —

“Scilicet ingenuas didicisse fideliter artes
Emollit mores nec sinit esse feros.”

It taketh away the wildness and barbarism and fierceness of men’s minds; but indeed the accent had need be upon *fideliter*; for a little superficial learning doth rather work a contrary effect. It taketh away all levity, temerity, and insolency, by copious suggestion of all doubts and difficulties, and acquainting the mind to balance reasons on both sides, and to turn back the first offers and conceits of the mind, and to accept of nothing but examined and tried. It taketh away vain admiration of anything, which is the root of all weakness. For all things are admired, either because they are new, or because they are great. For novelty, no man that wadeth in learning or contemplation thoroughly but will find that printed in his heart, *Nil novi super terram*. Neither can any man marvel at the play of puppets, that goeth behind the curtain, and adviseth well of the motion.

And for magnitude, as Alexander the Great, after that he was used to great armies, and the great conquests of the spacious provinces in Asia, when he received letters out of Greece, of some fights and services there, which were commonly for a passage or a fort, or some walled town at the most, he said:—"It seemed to him that he was advertised of the battles of the frogs and the mice, that the old tales went of." So certainly, if a man meditate much upon the universal frame of nature, the earth with men upon it (the divineness of souls except) will not seem much other than an ant-hill, whereas some ants carry corn, and some carry their young, and some go empty, and all to and fro a little heap of dust. It taketh away or mitigateth fear of death or adverse fortune, which is one of the greatest impediments of virtue and imperfections of manners. For if a man's mind be deeply seasoned with the consideration of the mortality and corruptible nature of things, he will easily concur with Epictetus, who went forth one day and saw a woman weeping for her pitcher of earth that was broken, and went forth the next day and saw a woman weeping for her son that was dead, and thereupon said, "*Heri vidi fragilem frangi*, *hodie vidi mortalem mori*." And, therefore, Virgil did excellently and profoundly couple the knowledge of causes and the conquest of all fears together, as *concomitantia*.

"Felix, qui potuit rerum cognoscere causas,
Quique metus omnes, et inexorabile fatum
Subjecit pedibus, strepitumque Acherontis avari."

(2) It were too long to go over the particular remedies which learning doth minister to all the diseases of the mind: sometimes purging the ill humours, sometimes opening the obstructions, sometimes helping digestion, sometimes increasing appetite, sometimes healing the wounds and exulcerations thereof, and the like; and, therefore, I will conclude with that which hath *rationem totius* — which is, that it disposeth the constitution of the mind not to be fixed or settled in the defects thereof, but still to be capable and susceptible of growth and reformation. For the unlearned man knows not what it is to descend into

himself, or to call himself to account, nor the pleasure of that *suavissima vita*, *indies sentire se fieri meliorem*. The good parts he hath he will learn to show to the full, and use them dexterously, but not much to increase them. The faults he hath he will learn how to hide and colour them, but not much to amend them; like an ill mower, that mows on still, and never whets his scythe. Whereas with the learned man it fares otherwise, that he doth ever intermix the correction and amendment of his mind with the use and employment thereof. Nay, further, in general and in sum, certain it is that *Veritas* and *Bonitas* differ but as the seal and the print; for truth prints goodness, and they be the clouds of error which descend in the storms of passions and perturbations.

(3) From moral virtue let us pass on to matter of power and commandment, and consider whether in right reason there be any comparable with that wherewith knowledge investeth and crowneth man's nature. We see the dignity of the commandment is according to the dignity of the commanded; to have commandment over beasts as herdmen have, is a thing contemptible; to have commandment over children as schoolmasters have, is a matter of small honour; to have commandment over galley-slaves is a disparagement rather than an honour. Neither is the commandment of tyrants much better, over people which have put off the generosity of their minds; and, therefore, it was ever holden that honours in free monarchies and commonwealths had a sweetness more than in tyrannies, because the commandment extendeth more over the wills of men, and not only over their deeds and services. And therefore, when Virgil putteth himself forth to attribute to Augustus Cæsar the best of human honours, he doth it in these words: —

"Victorque volentes
Per populos dat jura, viamque affectat Olympo."

But yet the commandment of knowledge is yet higher than the commandment over the will; for it is a commandment over the reason, belief, and understanding of man, which is the highest part of the mind, and giveth law to the will itself.

For there is no power on earth which setteth up a throne or chair of estate in the spirits and souls of men, and in their cogitations, imaginations, opinions, and beliefs, but knowledge and learning. And therefore we see the detestable and extreme pleasure that arch-heretics, and false prophets, and impostors are transported with, when they once find in themselves that they have a superiority in the faith and conscience of men; so great as if they have once tasted of it, it is seldom seen that any torture or persecution can make them relinquish or abandon it. But as this is that which the author of the Revelation calleth the depth or profoundness of Satan, so by argument of contraries, the just and lawful sovereignty over men's understanding, by force of truth rightly interpreted, is that which approacheth nearest to the similitude of the divine rule.

(4) As for fortune and advancement, the beneficence of learning is not so confined to give fortune only to states and commonwealths, as it doth not likewise give fortune to particular persons. For it was well noted long ago, that Homer hath given more men their livings, than either Sylla, or Cæsar, or Augustus ever did, notwithstanding their great largesses and donatives, and distributions of lands to so many legions. And no doubt it is hard to say whether arms or learning have advanced greater numbers. And in case of sovereignty we see, that if arms or descent have carried away the kingdom, yet learning hath carried the priesthood, which ever hath been in some competition with empire.

(5) Again, for the pleasure and delight of knowledge and learning, it far surpasseth all other in nature. For, shall the pleasures of the affections so exceed the pleasure of the sense, as much as the obtaining of desire or victory exceedeth a song or a dinner? and must not of consequence the pleasures of the intellect or understanding exceed the pleasures of the affections? We see in all other pleasures there is satiety, and after they be used, their verdure departeth, which showeth well they be but deceits of pleasure, and not pleasures; and that it was the novelty which pleased, and not the quality. And, therefore, we see that voluptuous men turn friars, and ambitions princes turn melancholy. But of knowledge there is no satiety, but satisfaction and appetite are perpetually interchangeable; and, therefore, appeareth to be good in itself simply, without

fallacy or accident. Neither is that pleasure of small efficacy and contentment to the mind of man, which the poet Lucretius describeth elegantly: —

"Suave mari magno, turbantibus æquora ventis, &c."

"It is a view of delight," saith he, "to stand or walk upon the shore side, and to see a ship tossed with tempest upon the sea; or to be in a fortified tower, and to see two battles join upon a plain. But it is a pleasure incomparable, for the mind of man to be settled, landed, and fortified in the certainty of truth; and from thence to descry and behold the errors, perturbations, labours, and wanderings up and down of other men."

(6) Lastly, leaving the vulgar arguments, that by learning man excelleth man in that wherein man excelleth beasts; that by learning man ascendeth to the heavens and their motions, where in body he cannot come; and the like: let us conclude with the dignity and excellency of knowledge and learning in that whereunto man's nature doth most aspire, which is immortality, or continuance; for to this tendeth generation, and raising of houses and families; to this tend buildings, foundations, and monuments; to this tendeth the desire of memory, fame, and celebration; and in effect the strength of all other human desires. We see then how far the monuments of wit and learning are more durable than the monuments of power or of the hands. For have not the verses of Homer continued twenty-five hundred years, or more, without the loss of a syllable or letter; during which the infinite palaces, temples, castles, cities, have been decayed and demolished? It is not possible to have the true pictures or statues of Cyrus, Alexander, Cæsar, no nor of the kings or great personages of much later years; for the originals cannot last, and the copies cannot but leese of the life and truth. But the images of men's wits and knowledges remain in books, exempted from the wrong of time and capable of perpetual renovation. Neither are they fitly to be called images, because they generate still, and cast their seeds in the minds of others, provoking and causing infinite actions and opinions in succeeding ages. So that if the invention of the ship was thought so noble, which carrieth riches and commodities from place to place, and consociateth the most remote regions in participation of their fruits, how much more are letters to

be magnified, which as ships pass through the vast seas of time, and make ages so distant to participate of the wisdom, illuminations, and inventions, the one of the other? Nay, further, we see some of the philosophers which were least divine, and most immersed in the senses, and denied generally the immortality of the soul, yet came to this point, that whatsoever motions the spirit of man could act and perform without the organs of the body, they thought might remain after death, which were only those of the understanding and not of the affection; so immortal and incorruptible a thing did knowledge seem unto them to be. But we, that know by divine revelation that not only the understanding but the affections purified, not only the spirit but the body changed, shall be advanced to immortality, do disclaim in these rudiments of the senses. But it must be remembered, both in this last point, and so it may likewise be needful in other places, that in probation of the dignity of knowledge or learning, I did in the beginning separate divine testimony from human, which method I have pursued, and so handled them both apart.

(7) Nevertheless I do not pretend, and I know it will be impossible for me, by any pleading of mine, to reverse the judgment, either of Æsop's cock, that preferred the barleycorn before the gem; or of Midas, that being chosen judge between Apollo, president of the Muses, and Pan, god of the flocks, judged for plenty; or of Paris, that judged for beauty and love against wisdom and power; or of Agrippina, *occidat matrem*, *modo imperet*, that preferred empire with any condition never so detestable; or of Ulysses, *qui vetulam prætulit immortalitati*, being a figure of those which prefer custom and habit before all excellency, or of a number of the like popular judgments. For these things must continue as they have been; but so will that also continue whereupon learning hath ever relied, and which faileth not: *Justificata est sapientia a filiis suis*.

THE SECOND BOOK.

To the King.

1. It might seem to have more convenience, though it come often otherwise to pass (excellent King), that those which are fruitful in their generations, and have in themselves the foresight of immortality in their descendants, should likewise be more careful of the good estate of future times, unto which they know they must transmit and commend over their dearest pledges. Queen Elizabeth was a sojourner in the world in respect of her unmarried life, and was a blessing to her own times; and yet so as the impression of her good government, besides her happy memory, is not without some effect which doth survive her. But to your Majesty, whom God hath already blessed with so much royal issue, worthy to continue and represent you for ever, and whose youthful and fruitful bed doth yet promise many the like renovations, it is proper and agreeable to be conversant not only in the transitory parts of good government, but in those acts also which are in their nature permanent and perpetual. Amongst the which (if affection do not transport me) there is not any more worthy than the further endowment of the world with sound and fruitful knowledge. For why should a few received authors stand up like Hercules' columns, beyond which there should be no sailing or discovering, since we have so bright and benign a star as your Majesty to conduct and prosper us? To return therefore where we left, it remaineth to consider of what kind those acts are which have been undertaken and performed by kings and others for the increase and advancement of learning, wherein I purpose to speak actively, without digressing or dilating.

2. Let this ground therefore be laid, that all works are over common by amplitude of reward, by soundness of direction, and by the conjunction of labours. The first multiplieth endeavour, the second preventeth error, and the third supplieth the frailty of man. But the principal of these is direction, for *claudus in via antevertit cursorem extra viam*; and Solomon excellently setteth it

down, “If the iron be not sharp, it requireth more strength, but wisdom is that which prevaileth,” signifying that the invention or election of the mean is more effectual than any enforcement or accumulation of endeavours. This I am induced to speak, for that (not derogating from the noble intention of any that have been deservers towards the state of learning), I do observe nevertheless that their works and acts are rather matters of magnificence and memory than of progression and proficience, and tend rather to augment the mass of learning in the multitude of learned men than to rectify or raise the sciences themselves.

3. The works or acts of merit towards learning are conversant about three objects — the places of learning, the books of learning, and the persons of the learned. For as water, whether it be the dew of heaven or the springs of the earth, doth scatter and leese itself in the ground, except it be collected into some receptacle where it may by union comfort and sustain itself; and for that cause the industry of man hath made and framed springheads, conduits, cisterns, and pools, which men have accustomed likewise to beautify and adorn with accomplishments of magnificence and state, as well as of use and necessity; so this excellent liquor of knowledge, whether it descend from divine inspiration, or spring from human sense, would soon perish and vanish to oblivion, if it were not preserved in books, traditions, conferences, and places appointed, as universities, colleges, and schools, for the receipt and comforting of the same.

4. The works which concern the seats and places of learning are four — foundations and buildings, endowments with revenues, endowments with franchises and privileges, institutions and ordinances for government — all tending to quietness and privateness of life, and discharge of cares and troubles; much like the stations which Virgil prescribeth for the hiving of bees:

“Principio sedes apibus statioque petenda,
Quo neque sit ventis aditus, &c.”

5. The works touching books are two — first, libraries, which are as the shrines where all the relics of the ancient saints, full of true virtue, and that

without delusion or imposture, are preserved and reposed; secondly, new editions of authors, with more correct impressions, more faithful translations, more profitable glosses, more diligent annotations, and the like.

6. The works pertaining to the persons of learned men (besides the advancement and countenancing of them in general) are two — the reward and designation of readers in sciences already extant and invented; and the reward and designation of writers and inquirers concerning any parts of learning not sufficiently laboured and prosecuted.

7. These are summarily the works and acts wherein the merits of many excellent princes and other worthy personages, have been conversant. As for any particular commemorations, I call to mind what Cicero said when he gave general thanks, *Difficile non aliquem*, *ingratum quenquam prœterire*. Let us rather, according to the Scriptures, look unto that part of the race which is before us, than look back to that which is already attained.

8. First, therefore, amongst so many great foundations of colleges in Europe, I find strange that they are all dedicated to professions, and none left free to arts and sciences at large. For if men judge that learning should be referred to action, they judge well; but in this they fall into the error described in the ancient fable, in which the other parts of the body did suppose the stomach had been idle, because it neither performed the office of motion, as the limbs do, nor of sense, as the head doth; but yet notwithstanding it is the stomach that digesteth and distributeth to all the rest. So if any man think philosophy and universality to be idle studies, he doth not consider that all professions are from thence served and supplied. And this I take to be a great cause that hath hindered the progression of learning, because these fundamental knowledges have been studied but in passage. For if you will have a tree bear more fruit than it hath used to do, it is not anything you can do to the boughs, but it is the stirring of the earth and putting new mould about thee roots that must work it. Neither is it to be forgotten, that this dedicating of foundations and dotations to professory learning hath not only had a malign aspect and influence upon the growth of sciences, but hath also been prejudicial to states, and governments. For hence it proceedeth

that princes find a solitude in regard of able men to serve them in causes of estate, because there is no education collegiate which is free, where such as were so disposed might give themselves in histories, modern languages, books of policy and civil discourse, and other the like enablements unto service of estate.

9. And because founders of colleges do plant, and founders of lectures do water, it followeth well in order to speak of the defect which is in public lectures; namely, in the smallness, and meanness of the salary or reward which in most places is assigned unto them, whether they be lectures of arts, or of professions. For it is necessary to the progression of sciences that readers be of the most able and sufficient men; as those which are ordained for generating and propagating of sciences, and not for transitory use. This cannot be, except their condition and endowment be such as may content the ablest man to appropriate his whole labour and continue his whole age in that function and attendance; and therefore must have a proportion answerable to that mediocrity or competency of advancement, which may be expected from a profession or the practice of a profession. So as, if you will have sciences flourish, you must observe David's military law, which was, "That those which stayed with the carriage should have equal part with those which were in the action;" else will the carriages be ill attended. So readers in sciences are indeed the guardians of the stores and provisions of sciences, whence men in active courses are furnished, and therefore ought to have equal entertainment with them; otherwise if the fathers in sciences be of the weakest sort or be ill maintained,

"Et patrum invalidi referent jejunia nati."

10. Another defect I note, wherein I shall need some alchemist to help me, who call upon men to sell their books, and to build furnaces; quitting and forsaking Minerva and the Muses as barren virgins, and relying upon Vulcan. But certain it is, that unto the deep, fruitful, and operative study of many sciences, specialty natural philosophy and physic, books be not only the instrumentals; wherein also the beneficence of men hath not been altogether wanting. For we see spheres, globes, astrolabes, maps, and the like, have been provided as appurtenances to astronomy and cosmography, as well as books.

We see likewise that some places instituted for physic have annexed the commodity of gardens for simples of all sorts, and do likewise command the use of dead bodies for anatomies. But these do respect but a few things. In general, there will hardly be any main proficience in the disclosing of nature, except there be some allowance for expenses about experiments; whether they be experiments appertaining to Vulcanus or Dædalus, furnace or engine, or any other kind. And therefore as secretaries and spials of princes and states bring in bills for intelligence, so you must allow the spials and intelligencers of nature to bring in their bills; or else you shall be ill advertised.

11. And if Alexander made such a liberal assignation to Aristotle of treasure for the allowance of hunters, fowlers, fishers, and the like, that he might compile a history of nature, much better do they deserve it that travail in arts of nature.

12. Another defect which I note is an intermission or neglect in those which are governors in universities, of consultation, and in princes or superior persons, of visitation: to enter into account and consideration, whether the readings, exercises, and other customs appertaining unto learning, anciently begun and since continued, be well instituted or no; and thereupon to ground an amendment or reformation in that which shall be found inconvenient. For it is one of your Majesty's own most wise and princely maxims, "That in all usages and precedents, the times be considered wherein they first began; which if they were weak or ignorant, it derogateth from the authority of the usage, and leaveth it for suspect." And therefore inasmuch as most of the usages and orders of the universities were derived from more obscure times, it is the more requisite they be re-examined. In this kind I will give an instance or two, for example sake, of things that are the most obvious and familiar. The one is a matter, which though it be ancient and general, yet I hold to be an error; which is, that scholars in universities come too soon and too unripe to logic and rhetoric, arts fitter for graduates than children and novices. For these two, rightly taken, are the gravest of sciences, being the arts of arts; the one for judgment, the other for ornament. And they be the rules and directions how to set forth and dispose matter: and therefore for minds empty and unfraught with matter, and which have not

gathered that which Cicero calleth *sylva* and *supellex*, stuff and variety, to begin with those arts (as if one should learn to weigh, or to measure, or to paint the wind) doth work but this effect, that the wisdom of those arts, which is great and universal, is almost made contemptible, and is degenerate into childish sophistry and ridiculous affectation. And further, the untimely learning of them hath drawn on by consequence the superficial and unprofitable teaching and writing of them, as fitteth indeed to the capacity of children. Another is a lack I find in the exercises used in the universities, which do snake too great a divorce between invention and memory. For their speeches are either premeditate, in *verbis conceptis*, where nothing is left to invention, or merely extemporal, where little is left to memory. Whereas in life and action there is least use of either of these, but rather of intermixtures of premeditation and invention, notes and memory. So as the exercise fitteth not the practice, nor the image the life; and it is ever a true rule in exercises, that they be framed as near as may be to the life of practice; for otherwise they do pervert the motions and faculties of the mind, and not prepare them. The truth whereof is not obscure, when scholars come to the practices of professions, or other actions of civil life; which when they set into, this want is soon found by themselves, and sooner by others. But this part, touching the amendment of the institutions and orders of universities, I will conclude with the clause of Cæsar's letter to Oppius and Balbes, *Hoc quemadmodum fieri possit*, *nonnulla mihi in mentem veniunt*, *et multa reperiri possunt*: *de iis rebus rgo vos ut cogitationem suscipiatis*.

13. Another defect which I note ascendeth a little higher than the precedent. For as the proficience of learning consisteth much in the orders and institutions of universities in the same states and kingdoms, so it would be yet more advanced, if there were more intelligence mutual between the universities of Europe than now there is. We see there be many orders and foundations, which though they be divided under several sovereignties and territories, yet they take themselves to have a kind of contract, fraternity, and correspondence one with the other, insomuch as they have provincials and generals. And surely as nature createth brotherhood in families, and arts mechanical contract brotherhoods in

communalties, and the anointment of God superinduceth a brotherhood in kings and bishops, so in like manner there cannot but be a fraternity in learning and illumination, relating to that paternity which is attributed to God, who is called the Father of illuminations or lights.

14. The last defect which I will note is, that there hath not been, or very rarely been, any public designation of writers or inquirers concerning such parts of knowledge as may appear not to have been already sufficiently laboured or undertaken; unto which point it is an inducement to enter into a view and examination what parts of learning have been prosecuted, and what omitted. For the opinion of plenty is amongst the causes of want, and the great quantity of books maketh a show rather of superfluity than lack; which surcharge nevertheless is not to be remedied by making no more books, but by making more good books, which, as the serpent of Moses, might devour the serpents of the enchanters.

15. The removing of all the defects formerly enumerate, except the last, and of the active part also of the last (which is the designation of writers), are *opera basilica*; towards which the endeavours of a private man may be but as an image in a crossway, that may point at the way, but cannot go it. But the inducing part of the latter (which is the survey of learning) may be set forward by private travail. Wherefore I will now attempt to make a general and faithful perambulation of learning, with an inquiry what parts thereof lie fresh and waste, and not improved and converted by the industry of man, to the end that such a plot made and recorded to memory may both minister light to any public designation, and, also serve to excite voluntary endeavours. Wherein, nevertheless, my purpose is at this time to note only omissions and deficiences, and not to make any redargution of errors or incomplete prosecutions. For it is one thing to set forth what ground lieth unmanured, and another thing to correct ill husbandry in that which is manured.

In the handling and undertaking of which work I am not ignorant what it is that I do now move and attempt, nor insensible of mine own weakness to sustain my purpose. But my hope is, that if my extreme love to learning carry me too

far, I may obtain the excuse of affection; for that "It is not granted to man to love and to be wise." But I know well I can use no other liberty of judgment than I must leave to others; and I for my part shall be indifferently glad either to perform myself, or accept from another, that duty of humanity — *Nam qui erranti comiter monstrat viam*, &c. I do foresee likewise that of those things which I shall enter and register as deficiences and omissions, many will conceive and censure that some of them are already done and extant; others to be but curiosities, and things of no great use; and others to be of too great difficulty, and almost impossibility to be compassed and effected. But for the two first, I refer myself to the particulars. For the last, touching impossibility, I take it those things are to be held possible which may be done by some person, though not by every one; and which may be done by many, though not by any one; and which may be done in the succession of ages, though not within the hourglass of one man's life; and which may be done by public designation, though not by private endeavour. But, notwithstanding, if any man will take to himself rather that of Solomon, "*Dicit piger*, *Leo est in via*," than that of Virgil, "*Possunt quia posse videntur*," I shall be content that my labours be esteemed but as the better sort of wishes; for as it asketh some knowledge to demand a question not impertinent, so it requireth some sense to make a wish not absurd.

I. (1) The parts of human learning have reference to the three parts of man's understanding, which is the seat of learning: history to his memory, poesy to his imagination, and philosophy to his reason. Divine learning receiveth the same distribution; for, the spirit of man is the same, though the revelation of oracle and sense be diverse. So as theology consisteth also of history of the Church; of parables, which is divine poesy; and of holy doctrine or precept. For as for that part which seemeth supernumerary, which is prophecy, it is but divine history, which hath that prerogative over human, as the narration may be before the fact as well as after.

(2) History is natural, civil, ecclesiastical, and literary; whereof the first three I allow as extant, the fourth I note as deficient. For no man hath propounded to himself the general state of learning to be described and represented from age to

age, as many have done the works of Nature, and the state, civil and ecclesiastical; without which the history of the world seemeth to me to be as the statue of Polyphemus with his eye out, that part being wanting which doth most show the spirit and life of the person. And yet I am not ignorant that in divers particular sciences, as of the jurisconsults, the mathematicians, the rhetoricians, the philosophers, there are set down some small memorials of the schools, authors, and books; and so likewise some barren relations touching the invention of arts or usages. But a just story of learning, containing the antiquities and originals of knowledges and their sects, their inventions, their traditions, their diverse administrations and managings, their flourishings, their oppositions, decays, depressions, oblivions, removes, with the causes and occasions of them, and all other events concerning learning, throughout the ages of the world, I may truly affirm to be wanting; the use and end of which work I do not so much design for curiosity or satisfaction of those that are the lovers of learning, but chiefly for a more serious and grave purpose, which is this in few words, that it will make learned men wise in the use and administration of learning. For it is not Saint Augustine's nor Saint Ambrose's works that will make so wise a divine as ecclesiastical history thoroughly read and observed, and the same reason is of learning.

(3) History of Nature is of three sorts; of Nature in course, of Nature erring or varying, and of Nature altered or wrought; that is, history of creatures, history of marvels, and history of arts. The first of these no doubt is extant, and that in good perfection; the two latter are bandied so weakly and unprofitably as I am moved to note them as deficient. For I find no sufficient or competent collection of the works of Nature which have a digression and deflexion from the ordinary course of generations, productions, and motions; whether they be singularities of place and region, or the strange events of time and chance, or the effects of yet unknown properties, or the instances of exception to general kinds. It is true I find a number of books of fabulous experiments and secrets, and frivolous impostures for pleasure and strangeness; but a substantial and severe collection of the heteroclites or irregulars of Nature, well examined and described, I find

not, specially not with due rejection of fables and popular errors. For as things now are, if an untruth in Nature be once on foot, what by reason of the neglect of examination, and countenance of antiquity, and what by reason of the use of the opinion in similitudes and ornaments of speech, it is never called down.

(4) The use of this work, honoured with a precedent in Aristotle, is nothing less than to give contentment to the appetite of curious and vain wits, as the manner of Mirabilaries is to do; but for two reasons, both of great weight: the one to correct the partiality of axioms and opinions, which are commonly framed only upon common and familiar examples; the other because from the wonders of Nature is the nearest intelligence and passage towards the wonders of art, for it is no more but by following and, as it were, hounding Nature in her wanderings, to be able to lead her afterwards to the same place again. Neither am I of opinion, in this history of marvels, that superstitious narrations of sorceries, witchcrafts, dreams, divinations, and the like, where there is an assurance and clear evidence of the fact, be altogether excluded. For it is not yet known in what cases and how far effects attributed to superstition do participate of natural causes; and, therefore, howsoever the practice of such things is to be condemned, yet from the speculation and consideration of them light may be taken, not only for the discerning of the offences, but for the further disclosing of Nature. Neither ought a man to make scruple of entering into these things for inquisition of truth, as your Majesty hath showed in your own example, who, with the two clear eyes of religion and natural philosophy, have looked deeply and wisely into these shadows, and yet proved yourself to be of the nature of the sun, which passeth through pollutions and itself remains as pure as before. But this I hold fit, that these narrations, which have mixture with superstition, be sorted by themselves, and not to be mingled with the narrations which are merely and sincerely natural. But as for the narrations touching the prodigies and miracles of religions, they are either not true or not natural; and, therefore, impertinent for the story of Nature.

(5) For history of Nature, wrought or mechanical, I find some collections made of agriculture, and likewise of manual arts; but commonly with a rejection

of experiments familiar and vulgar; for it is esteemed a kind of dishonour unto learning to descend to inquiry or meditation upon matters mechanical, except they be such as may be thought secrets, rarities, and special subtleties; which humour of vain and supercilious arrogancy is justly derided in Plato, where he brings in Hippias, a vaunting sophist, disputing with Socrates, a true and unfeigned inquisitor of truth; where, the subject being touching beauty, Socrates, after his wandering manner of inductions, put first an example of a fair virgin, and then of a fair horse, and then of a fair pot well glazed, whereat Hippias was offended, and said, "More than for courtesy's sake, he did think much to dispute with any that did allege such base and sordid instances." Whereunto Socrates answereth, "You have reason, and it becomes you well, being a man so trim in your vestments," &c., and so goeth on in an irony. But the truth is, they be not the highest instances that give the securest information, as may be well expressed in the tale so common of the philosopher that, while he gazed upwards to the stars, fell into the water; for if he had looked down he might have seen the stars in the water, but looking aloft he could not see the water in the stars. So it cometh often to pass that mean and small things discover great, better than great can discover the small; and therefore Aristotle noteth well, "That the nature of everything is best seen in his smallest portions." And for that cause he inquireth the nature of a commonwealth, first in a family, and the simple conjugations of man and wife, parent and child, master and servant, which are in every cottage. Even so likewise the nature of this great city of the world, and the policy thereof, must be first sought in mean concordances and small portions. So we see how that secret of Nature, of the turning of iron touched with the loadstone towards the north, was found out in needles of iron, not in bars of iron.

(6) But if my judgment be of any weight, the use of history mechanical is of all others the most radical and fundamental towards natural philosophy; such natural philosophy as shall not vanish in the fume of subtle, sublime, or delectable speculation, but such as shall be operative to the endowment and benefit of man's life. For it will not only minister and suggest for the present many ingenious practices in all trades, by a connection and transferring of the

observations of one art to the use of another, when the experiences of several mysteries shall fall under the consideration of one man's mind; but further, it will give a more true and real illumination concerning causes and axioms than is hitherto attained. For like as a man's disposition is never well known till he be crossed, nor Proteus ever changed shapes till he was straitened and held fast; so the passages and variations of nature cannot appear so fully in the liberty of nature as in the trials and vexations of art.

II. (1) For civil history, it is of three kinds; not unfitly to be compared with the three kinds of pictures or images. For of pictures or images we see some are unfinished, some are perfect, and some are defaced. So of histories we may find three kinds: memorials, perfect histories, and antiquities; for memorials are history unfinished, or the first or rough drafts of history; and antiquities are history defaced, or some remnants of history which have casually escaped the shipwreck of time.

(2) Memorials, or preparatory history, are of two sorts; whereof the one may be termed commentaries, and the other registers. Commentaries are they which set down a continuance of the naked events and actions, without the motives or designs, the counsels, the speeches, the pretexts, the occasions, and other passages of action. For this is the true nature of a commentary (though Cæsar, in modesty mixed with greatness, did for his pleasure apply the name of a commentary to the best history of the world). Registers are collections of public acts, as decrees of council, judicial proceedings, declarations and letters of estate, orations, and the like, without a perfect continuance or contexture of the thread of the narration.

(3) Antiquities, or remnants of history, are, as was said, *tanquam tabula naufragii*: when industrious persons, by an exact and scrupulous diligence and observation, out of monuments, names, words, proverbs, traditions, private records and evidences, fragments of stories, passages of books that concern not story, and the like, do save and recover somewhat from the deluge of time.

(4) In these kinds of unperfect histories I do assign no deficience, for they are *tanquam imperfecte mista*; and therefore any deficience in them is but their

nature. As for the corruptions and moths of history, which are epitomes, the use of them deserveth to be banished, as all men of sound judgment have confessed, as those that have fretted and corroded the sound bodies of many excellent histories, and wrought them into base and unprofitable dregs.

(5) History, which may be called just and perfect history, is of three kinds, according to the object which it propoundeth, or pretendeth to represent: for it either representeth a time, or a person, or an action. The first we call chronicles, the second lives, and the third narrations or relations. Of these, although the first be the most complete and absolute kind of history, and hath most estimation and glory, yet the second excelleth it in profit and use, and the third in verity and sincerity. For history of times representeth the magnitude of actions, and the public faces and deportments of persons, and passeth over in silence the smaller passages and motions of men and matters. But such being the workmanship of God, as He doth hang the greatest weight upon the smallest wires, *maxima è minimis*, *suspendens*, it comes therefore to pass, that such histories do rather set forth the pomp of business than the true and inward resorts thereof. But lives, if they be well written, propounding to themselves a person to represent, in whom actions, both greater and smaller, public and private, have a commixture, must of necessity contain a more true, native, and lively representation. So again narrations and relations of actions, as the war of Peloponnesus, the expedition of Cyrus Minor, the conspiracy of Catiline, cannot but be more purely and exactly true than histories of times, because they may choose an argument comprehensible within the notice and instructions of the writer: whereas he that undertaketh the story of a time, specially of any length, cannot but meet with many blanks and spaces, which he must be forced to fill up out of his own wit and conjecture.

(6) For the history of times, I mean of civil history, the providence of God hath made the distribution. For it hath pleased God to ordain and illustrate two exemplar states of the world for arms, learning, moral virtue, policy, and laws; the state of Græcia and the state of Rome; the histories whereof occupying the middle part of time, have more ancient to them histories which may by one

common name be termed the antiquities of the world; and after them, histories which may be likewise called by the name of modern history.

(7) Now to speak of the deficiences. As to the heathen antiquities of the world it is in vain to note them for deficient. Deficient they are no doubt, consisting most of fables and fragments; but the deficience cannot be holpen; for antiquity is like fame, *caput inter nubila condit*, her head is muffled from our sight. For the history of the exemplar states, it is extant in good perfection. Not but I could wish there were a perfect course of history for Græcia, from Theseus to Philopœmen (what time the affairs of Græcia drowned and extinguished in the affairs of Rome), and for Rome from Romulus to Justinianus, who may be truly said to be *ultimus Romanorum*. In which sequences of story the text of Thucydides and Xenophon in the one, and the texts of Livius, Polybius, Sallustius, Cæsar, Appianus, Tacitus, Herodianus in the other, to be kept entire, without any diminution at all, and only to be supplied and continued. But this is a matter of magnificence, rather to be commended than required; and we speak now of parts of learning supplemental, and not of supererogation.

(8) But for modern histories, whereof there are some few very worthy, but the greater part beneath mediocrity, leaving the care of foreign stories to foreign states, because I will not be *curiosus in aliena republica*, I cannot fail to represent to your Majesty the unworthiness of the history of England in the main continuance thereof, and the partiality and obliquity of that of Scotland in the latest and largest author that I have seen: supposing that it would be honour for your Majesty, and a work very memorable, if this island of Great Britain, as it is now joined in monarchy for the ages to come, so were joined in one history for the times passed, after the manner of the sacred history, which draweth down the story of the ten tribes and of the two tribes as twins together. And if it shall seem that the greatness of this work may make it less exactly performed, there is an excellent period of a much smaller compass of time, as to the story of England; that is to say, from the uniting of the Roses to the uniting of the kingdoms; a portion of time wherein, to my understanding, there hath been the rarest varieties that in like number of successions of any hereditary monarchy

hath been known. For it beginneth with the mixed adoption of a crown by arms and title; an entry by battle, an establishment by marriage; and therefore times answerable, like waters after a tempest, full of working and swelling, though without extremity of storm; but well passed through by the wisdom of the pilot, being one of the most sufficient kings of all the number. Then followeth the reign of a king, whose actions, howsoever conducted, had much intermixture with the affairs of Europe, balancing and inclining them variably; in whose time also began that great alteration in the state ecclesiastical, an action which seldom cometh upon the stage. Then the reign of a minor; then an offer of a usurpation (though it was but as *febris ephemera*). Then the reign of a queen matched with a foreigner; then of a queen that lived solitary and unmarried, and yet her government so masculine, as it had greater impression and operation upon the states abroad than it any ways received from thence. And now last, this most happy and glorious event, that this island of Britain, divided from all the world, should be united in itself, and that oracle of rest given to ÆNeas, *antiquam exquirite matrem*, should now be performed and fulfilled upon the nations of England and Scotland, being now reunited in the ancient mother name of Britain, as a full period of all instability and peregrinations. So that as it cometh to pass in massive bodies, that they have certain trepidations and waverings before they fix and settle, so it seemeth that by the providence of God this monarchy, before it was to settle in your majesty and your generations (in which I hope it is now established for ever), it had these prelusive changes and varieties.

(9) For lives, I do find strange that these times have so little esteemed the virtues of the times, as that the writings of lives should be no more frequent. For although there be not many sovereign princes or absolute commanders, and that states are most collected into monarchies, yet are there many worthy personages that deserve better than dispersed report or barren eulogies. For herein the invention of one of the late poets is proper, and doth well enrich the ancient fiction. For he feigneth that at the end of the thread or web of every man's life there was a little medal containing the person's name, and that Time waited upon the shears, and as soon as the thread was cut caught the medals, and carried them

to the river of Lathe; and about the bank there were many birds flying up and down, that would get the medals and carry them in their beak a little while, and then let them fall into the river. Only there were a few swans, which if they got a name would carry it to a temple where it was consecrate. And although many men, more mortal in their affections than in their bodies, do esteem desire of name and memory but as a vanity and ventosity,

"Animi nil magnæ laudis egentes;"

which opinion cometh from that root, *Non prius laudes contempsimus*, *quam laudanda facere desivimus*: yet that will not alter Solomon's judgment, *Memoria justi cum laudibus*, *at impiorum nomen putrescet*: the one flourisheth, the other either consumeth to present oblivion, or turneth to an ill odour. And therefore in that style or addition, which is and hath been long well received and brought in use, *felicis memoriæ*, *piæ memoriæ*, *bonæ memoriæ*, we do acknowledge that which Cicero saith, borrowing it from Demosthenes, that *bona fama propria possessio defunctorum*; which possession I cannot but note that in our times it lieth much waste, and that therein there is a deficience.

(10) For narrations and relations of particular actions, there were also to be wished a greater diligence therein; for there is no great action but hath some good pen which attends it. And because it is an ability not common to write a good history, as may well appear by the small number of them; yet if particularity of actions memorable were but tolerably reported as they pass, the compiling of a complete history of times might be the better expected, when a writer should arise that were fit for it: for the collection of such relations might be as a nursery garden, whereby to plant a fair and stately garden when time should serve.

(11) There is yet another partition of history which Cornelius Tacitus maketh, which is not to be forgotten, specially with that application which he accoupleth it withal, annals and journals: appropriating to the former matters of estate, and to the latter acts and accidents of a meaner nature. For giving but a touch of certain magnificent buildings, he addeth, *Cum ex dignitate populi Romani repertum sit*, *res illustres annalibus*, *talia diurnis urbis actis mandare*. So as

there is a kind of contemplative heraldry, as well as civil. And as nothing doth derogate from the dignity of a state more than confusion of degrees, so it doth not a little imbase the authority of a history to intermingle matters of triumph, or matters of ceremony, or matters of novelty, with matters of state. But the use of a journal hath not only been in the history of time, but likewise in the history of persons, and chiefly of actions; for princes in ancient time had, upon point of honour and policy both, journals kept, what passed day by day. For we see the chronicle which was read before Ahasuerus, when he could not take rest, contained matter of affairs, indeed, but such as had passed in his own time and very lately before. But the journal of Alexander's house expressed every small particularity, even concerning his person and court; and it is yet a use well received in enterprises memorable, as expeditions of war, navigations, and the like, to keep diaries of that which passeth continually.

(12) I cannot likewise be ignorant of a form of writing which some grave and wise men have used, containing a scattered history of those actions which they have thought worthy of memory, with politic discourse and observation thereupon: not incorporate into the history, but separately, and as the more principal in their intention; which kind of ruminated history I think more fit to place amongst books of policy, whereof we shall hereafter speak, than amongst books of history. For it is the true office of history to represent the events themselves together with the counsels, and to leave the observations and conclusions thereupon to the liberty and faculty of every man's judgment. But mixtures are things irregular, whereof no man can define.

(13) So also is there another kind of history manifoldly mixed, and that is history of cosmography: being compounded of natural history, in respect of the regions themselves; of history civil, in respect of the habitations, regiments, and manners of the people; and the mathematics, in respect of the climates and configurations towards the heavens: which part of learning of all others in this latter time hath obtained most proficience. For it may be truly affirmed to the honour of these times, and in a virtuous emulation with antiquity, that this great

building of the world had never through-lights made in it, till the age of us and our fathers. For although they had knowledge of the antipodes,

"Nosque ubi primus equis Oriens afflavit anhelis,
Illic sera rubens accendit lumina Vesper,"

yet that might be by demonstration, and not in fact; and if by travel, it requireth the voyage but of half the globe. But to circle the earth, as the heavenly bodies do, was not done nor enterprised till these later times: and therefore these times may justly bear in their word, not only *plus ultra*, in precedence of the ancient *non ultra*, and *imitabile fulmen*, in precedence of the ancient *non imitabile fulmen*,

"Demens qui nimbos et non imitabile fulmen," &c.

but likewise *imitabile cælum*; in respect of the many memorable voyages after the manner of heaven about the globe of the earth.

(14) And this proficience in navigation and discoveries may plant also an expectation of the further proficience and augmentation of all sciences; because it may seem they are ordained by God to be coevals, that is, to meet in one age. For so the prophet Daniel speaking of the latter times foretelleth, *Plurimi pertransibunt*, *et multiplex erit scientia*: as if the openness and through-passage of the world and the increase of knowledge were appointed to be in the same ages; as we see it is already performed in great part: the learning of these later times not much giving place to the former two periods or returns of learning, the one of the Grecians, the other of the Romans.

III. (1) History ecclesiastical receiveth the same divisions with history civil: but further in the propriety thereof may be divided into the history of the Church, by a general name; history of prophecy; and history of providence. The first describeth the times of the militant Church, whether it be fluctuant, as the ark of Noah, or movable, as the ark in the wilderness, or at rest, as the ark in the Temple: that is, the state of the Church in persecution, in remove, and in peace. This part I ought in no sort to note as deficient; only I would that the virtue and

sincerity of it were according to the mass and quantity. But I am not now in hand with censures, but with omissions.

(2) The second, which is history of prophecy, consisteth of two relatives — the prophecy and the accomplishment; and, therefore, the nature of such a work ought to be, that every prophecy of the Scripture be sorted with the event fulfilling the same throughout the ages of the world, both for the better confirmation of faith and for the better illumination of the Church touching those parts of prophecies which are yet unfulfilled: allowing, nevertheless, that latitude which is agreeable and familiar unto divine prophecies, being of the nature of their Author, with whom a thousand years are but as one day, and therefore are not fulfilled punctually at once, but have springing and germinant accomplishment throughout many ages, though the height or fulness of them may refer to some one age. This is a work which I find deficient, but is to be done with wisdom, sobriety, and reverence, or not at all.

(3) The third, which is history of Providence, containeth that excellent correspondence which is between God's revealed will and His secret will; which though it be so obscure, as for the most part it is not legible to the natural man — no, nor many times to those that behold it from the tabernacle — yet, at some times it pleaseth God, for our better establishment and the confuting of those which are as without God in the world, to write it in such text and capital letters, that, as the prophet saith, "He that runneth by may read it" — that is, mere sensual persons, which hasten by God's judgments, and never bend or fix their cogitations upon them, are nevertheless in their passage and race urged to discern it. Such are the notable events and examples of God's judgments, chastisements, deliverances, and blessings; and this is a work which has passed through the labour of many, and therefore I cannot present as omitted.

(4) There are also other parts of learning which are appendices to history. For all the exterior proceedings of man consist of words and deeds, whereof history doth properly receive and retain in memory the deeds; and if words, yet but as inducements and passages to deeds; so are there other books and writings which are appropriate to the custody and receipt of words only, which likewise are of

three sorts — orations, letters, and brief speeches or sayings. Orations are pleadings, speeches of counsel, laudatives, invectives, apologies, reprehensions, orations of formality or ceremony, and the like. Letters are according to all the variety of occasions, advertisements, advises, directions, propositions, petitions, commendatory, expostulatory, satisfactory, of compliment, of pleasure, of discourse, and all other passages of action. And such as are written from wise men, are of all the words of man, in my judgment, the best; for they are more natural than orations and public speeches, and more advised than conferences or present speeches. So again letters of affairs from such as manage them, or are privy to them, are of all others the best instructions for history, and to a diligent reader the best histories in themselves. For apophthegms, it is a great loss of that book of Cæsar's; for as his history, and those few letters of his which we have, and those apophthegms which were of his own, excel all men's else, so I suppose would his collection of apophthegms have done; for as for those which are collected by others, either I have no taste in such matters or else their choice hath not been happy. But upon these three kinds of writings I do not insist, because I have no deficiences to propound concerning them.

(5) Thus much therefore concerning history, which is that part of learning which answereth to one of the cells, domiciles, or offices of the mind of man, which is that of the memory.

IV. (1) Poesy is a part of learning in measure of words, for the most part restrained, but in all other points extremely licensed, and doth truly refer to the imagination; which, being not tied to the laws of matter, may at pleasure join that which nature hath severed, and sever that which nature hath joined, and so make unlawful matches and divorces of things — *Pictoribus atque poetis*, &c. It is taken in two senses in respect of words or matter. In the first sense, it is but a character of style, and belongeth to arts of speech, and is not pertinent for the present. In the latter, it is — as hath been said — one of the principal portions of learning, and is nothing else but feigned history, which may be styled as well in prose as in verse.

(2) The use of this feigned history hath been to give some shadow of satisfaction to the mind of man in those points wherein the nature of things doth deny it, the world being in proportion inferior to the soul; by reason whereof there is, agreeable to the spirit of man, a more ample greatness, a more exact goodness, and a more absolute variety, than can be found in the nature of things. Therefore, because the acts or events of true history have not that magnitude which satisfieth the mind of man, poesy feigneth acts and events greater and more heroical. Because true history propoundeth the successes and issues of actions not so agreeable to the merits of virtue and vice, therefore poesy feigns them more just in retribution, and more according to revealed Providence. Because true history representeth actions and events more ordinary and less interchanged, therefore poesy endueth them with more rareness and more unexpected and alternative variations. So as it appeareth that poesy serveth and conferreth to magnanimity, morality and to delectation. And therefore, it was ever thought to have some participation of divineness, because it doth raise and erect the mind, by submitting the shows of things to the desires of the mind; whereas reason doth buckle and bow the mind unto the nature of things. And we see that by these insinuations and congruities with man's nature and pleasure, joined also with the agreement and consort it hath with music, it hath had access and estimation in rude times and barbarous regions, where other learning stood excluded.

(3) The division of poesy which is aptest in the propriety thereof (besides those divisions which are common unto it with history, as feigned chronicles, feigned lives, and the appendices of history, as feigned epistles, feigned orations, and the rest) is into poesy narrative, representative, and allusive. The narrative is a mere imitation of history, with the excesses before remembered, choosing for subjects commonly wars and love, rarely state, and sometimes pleasure or mirth. Representative is as a visible history, and is an image of actions as if they were present, as history is of actions in nature as they are (that is) past. Allusive, or parabolical, is a narration applied only to express some special purpose or conceit; which latter kind of parabolical wisdom was much more in use in the

ancient times, as by the fables of Æsop, and the brief sentences of the seven, and the use of hieroglyphics may appear. And the cause was (for that it was then of necessity to express any point of reason which was more sharp or subtle than the vulgar in that manner) because men in those times wanted both variety of examples and subtlety of conceit. And as hieroglyphics were before letters, so parables were before arguments; and nevertheless now and at all times they do retain much life and rigour, because reason cannot be so sensible nor examples so fit.

(4) But there remaineth yet another use of poesy parabolical, opposite to that which we last mentioned; for that tendeth to demonstrate and illustrate that which is taught or delivered, and this other to retire and obscure it — that is, when the secrets and mysteries of religion, policy, or philosophy, are involved in fables or parables. Of this in divine poesy we see the use is authorised. In heathen poesy we see the exposition of fables doth fall out sometimes with great felicity: as in the fable that the giants being overthrown in their war against the gods, the earth their mother in revenge thereof brought forth Fame:

"Illam terra parens, ira irritat Deorum,
Extremam, ut perhibent, Cœo Enceladoque soroem,
Progenuit."

Expounded that when princes and monarchs have suppressed actual and open rebels, then the malignity of people (which is the mother of rebellion) doth bring forth libels and slanders, and taxations of the states, which is of the same kind with rebellion but more feminine. So in the fable that the rest of the gods having conspired to bind Jupiter, Pallas called Briareus with his hundred hands to his aid: expounded that monarchies need not fear any curbing of their absoluteness by mighty subjects, as long as by wisdom they keep the hearts of the people, who will be sure to come in on their side. So in the fable that Achilles was brought up under Chiron, the centaur, who was part a man and part a beast, expounded ingeniously but corruptly by Machiavel, that it belongeth to the

education and discipline of princes to know as well how to play the part of a lion in violence, and the fox in guile, as of the man in virtue and justice. Nevertheless, in many the like encounters, I do rather think that the fable was first, and the exposition devised, than that the moral was first, and thereupon the fable framed; for I find it was an ancient vanity in Chrysippus, that troubled himself with great contention to fasten the assertions of the Stoics upon the fictions of the ancient poets; but yet that all the fables and fictions of the poets were but pleasure and not figure, I interpose no opinion. Surely of these poets which are now extant, even Homer himself (notwithstanding he was made a kind of scripture by the later schools of the Grecians), yet I should without any difficulty pronounce that his fables had no such inwardness in his own meaning. But what they might have upon a more original tradition is not easy to affirm, for he was not the inventor of many of them.

(5) In this third part of learning, which is poesy, I can report no deficience; for being as a plant that cometh of the lust of the earth, without a formal seed, it hath sprung up and spread abroad more than any other kind. But to ascribe unto it that which is due, for the expressing of affections, passions, corruptions, and customs, we are beholding to poets more than to the philosophers' works; and for wit and eloquence, not much less than to orators' harangues. But it is not good to stay too long in the theatre. Let us now pass on to the judicial place or palace of the mind, which we are to approach and view with more reverence and attention.

V. (1) The knowledge of man is as the waters, some descending from above, and some springing from beneath: the one informed by the light of nature, the other inspired by divine revelation. The light of nature consisteth in the notions of the mind and the reports of the senses; for as for knowledge which man receiveth by teaching, it is cumulative and not original, as in a water that besides his own springhead is fed with other springs and streams. So then, according to these two differing illuminations or originals, knowledge is first of all divided into divinity and philosophy.

(2) In philosophy the contemplations of man do either penetrate unto God, or are circumferred to nature, or are reflected or reverted upon himself. Out of which several inquiries there do arise three knowledges — divine philosophy, natural philosophy, and human philosophy or humanity. For all things are marked and stamped with this triple character — the power of God, the difference of nature and the use of man. But because the distributions and partitions of knowledge are not like several lines that meet in one angle, and so touch but in a point, but are like branches of a tree that meet in a stem, which hath a dimension and quantity of entireness and continuance before it come to discontinue and break itself into arms and boughs; therefore it is good, before we enter into the former distribution, to erect and constitute one universal science, by the name of *philosophia prima*, primitive or summary philosophy, as the main and common way, before we come where the ways part and divide themselves; which science whether I should report as deficient or no, I stand doubtful. For I find a certain rhapsody of natural theology, and of divers parts of logic; and of that part of natural philosophy which concerneth the principles, and of that other part of natural philosophy which concerneth the soul or spirit — all these strangely commixed and confused; but being examined, it seemeth to me rather a depredation of other sciences, advanced and exalted unto some height of terms, than anything solid or substantive of itself. Nevertheless I cannot be ignorant of the distinction which is current, that the same things are handled but in several respects. As for example, that logic considereth of many things as they are in notion, and this philosophy as they are in nature — the one in appearance, the other in existence; but I find this difference better made than pursued. For if they had considered quantity, similitude, diversity, and the rest of those extern characters of things, as philosophers, and in nature, their inquiries must of force have been of a far other kind than they are. For doth any of them, in handling quantity, speak of the force of union, how and how far it multiplieth virtue? Doth any give the reason why some things in nature are so common, and in so great mass, and others so rare, and in so small quantity? Doth any, in handling similitude and diversity, assign the cause why iron should

not move to iron, which is more like, but move to the loadstone, which is less like? Why in all diversities of things there should be certain participles in nature which are almost ambiguous to which kind they should be referred? But there is a mere and deep silence touching the nature and operation of those common adjuncts of things, as in nature; and only a resuming and repeating of the force and use of them in speech or argument. Therefore, because in a writing of this nature I avoid all subtlety, my meaning touching this original or universal philosophy is thus, in a plain and gross description by negative: "That it be a receptacle for all such profitable observations and axioms as fall not within the compass of any of the special parts of philosophy or sciences, but are more common and of a higher stage."

(3) Now that there are many of that kind need not be doubted. For example: Is not the rule, *Si inœqualibus œqualia addas*, *omnia erunt inœqualia*, an axiom as well of justice as of the mathematics? and is there not a true coincidence between commutative and distributive justice, and arithmetical and geometrical proportion? Is not that other rule, *Quæ in eodem tertio conveniunt*, *et inter se conveniunt*, a rule taken from the mathematics, but so potent in logic as all syllogisms are built upon it? Is not the observation, *Omnia mutantur*, *nil interit*, a contemplation in philosophy thus, that the *quantum* of nature is eternal? in natural theology thus, that it requireth the same omnipotency to make somewhat nothing, which at the first made nothing somewhat? according to the Scripture, *Didici quod omnia opera*, *quæ fecit Deus*, *perseverent in perpetuum*; *non possumus eis quicquam addere nec auferre*. Is not the ground, which Machiavel wisely and largely discourseth concerning governments, that the way to establish and preserve them is to reduce them *ad principia* — a rule in religion and nature, as well as in civil administration? Was not the Persian magic a reduction or correspondence of the principles and architectures of nature to the rules and policy of governments? Is not the precept of a musician, to fall from a discord or harsh accord upon a concord or sweet accord, alike true in affection? Is not the trope of music, to avoid or slide from the close or cadence, common with the

trope of rhetoric of deceiving expectation? Is not the delight of the quavering upon a stop in music the same with the playing of light upon the water?

"Splendet tremulo sub lumine pontus."

Are not the organs of the senses of one kind with the organs of reflection, the eye with a glass, the ear with a cave or strait, determined and bounded? Neither are these only similitudes, as men of narrow observation may conceive them to be, but the same footsteps of nature, treading or printing upon several subjects or matters. This science therefore (as I understand it) I may justly report as deficient; for I see sometimes the profounder sort of wits, in handling some particular argument, will now and then draw a bucket of water out of this well for their present use; but the springhead thereof seemeth to me not to have been visited, being of so excellent use both for the disclosing of nature and the abridgment of art.

VI. (1) This science being therefore first placed as a common parent like unto Berecynthia, which had so much heavenly issue, *omnes cælicolas*, *omnes supera alta tenetes*; we may return to the former distribution of the three philosophies — divine, natural, and human. And as concerning divine philosophy or natural theology, it is that knowledge or rudiment of knowledge concerning God which may be obtained by the contemplation of His creatures; which knowledge may be truly termed divine in respect of the object, and natural in respect of the light. The bounds of this knowledge are, that it sufficeth to convince atheism, but not to inform religion; and therefore there was never miracle wrought by God to convert an atheist, because the light of nature might have led him to confess a God; but miracles have been wrought to convert idolaters and the superstitious, because no light of nature extendeth to declare the will and true worship of God. For as all works do show forth the power and skill of the workman, and not his image, so it is of the works of God, which do show the omnipotency and wisdom of the Maker, but not His image. And therefore therein the heathen opinion differeth from the sacred truth: for they supposed the world to be the image of God, and man to be an extract or compendious image of the world; but the Scriptures never vouchsafe to attribute to the world that honour, as to be the

image of God, but only *the work of His hands*; neither do they speak of any other image of God but man. Wherefore by the contemplation of nature to induce and enforce the acknowledgment of God, and to demonstrate His power, providence, and goodness, is an excellent argument, and hath been excellently handled by divers, but on the other side, out of the contemplation of nature, or ground of human knowledges, to induce any verity or persuasion concerning the points of faith, is in my judgment not safe; *Da fidei quæ fidei sunt*. For the heathen themselves conclude as much in that excellent and divine fable of the golden chain, "That men and gods were not able to draw Jupiter down to the earth; but, contrariwise, Jupiter was able to draw them up to heaven." So as we ought not to attempt to draw down or submit the mysteries of God to our reason, but contrariwise to raise and advance our reason to the divine truth. So as in this part of knowledge, touching divine philosophy, I am so far from noting any deficience, as I rather note an excess; whereunto I have digressed because of the extreme prejudice which both religion and philosophy hath received and may receive by being commixed together; as that which undoubtedly will make an heretical religion, and an imaginary and fabulous philosophy.

(2) Otherwise it is of the nature of angels and spirits, which is an appendix of theology, both divine and natural, and is neither inscrutable nor interdicted. For although the Scripture saith, "Let no man deceive you in sublime discourse touching the worship of angels, pressing into that he knoweth not," &c., yet notwithstanding if you observe well that precept, it may appear thereby that there be two things only forbidden — adoration of them, and opinion fantastical of them, either to extol them further than appertaineth to the degree of a creature, or to extol a man's knowledge of them further than he hath ground. But the sober and grounded inquiry, which may arise out of the passages of Holy Scriptures, or out of the gradations of nature, is not restrained. So of degenerate and revolted spirits, the conversing with them or the employment of them is prohibited, much more any veneration towards them; but the contemplation or science of their nature, their power, their illusions, either by Scripture or reason, is a part of spiritual wisdom. For so the apostle saith, "We are not ignorant of

his stratagems." And it is no more unlawful to inquire the nature of evil spirits, than to inquire the force of poisons in nature, or the nature of sin and vice in morality. But this part touching angels and spirits I cannot note as deficient, for many have occupied themselves in it; I may rather challenge it, in many of the writers thereof, as fabulous and fantastical.

VII. (1) Leaving therefore divine philosophy or natural theology (not divinity or inspired theology, which we reserve for the last of all as the haven and sabbath of all man's contemplations) we will now proceed to natural philosophy. If then it be true that Democritus said, "That the truth of nature lieth hid in certain deep mines and caves;" and if it be true likewise that the alchemists do so much inculcate, that Vulcan is a second nature, and imitateth that dexterously and compendiously, which nature worketh by ambages and length of time, it were good to divide natural philosophy into the mine and the furnace, and to make two professions or occupations of natural philosophers — some to be pioneers and some smiths; some to dig, and some to refine and hammer. And surely I do best allow of a division of that kind, though in more familiar and scholastical terms: namely, that these be the two parts of natural philosophy — the inquisition of causes, and the production of effects; speculative and operative; natural science, and natural prudence. For as in civil matters there is a wisdom of discourse, and a wisdom of direction; so is it in natural. And here I will make a request, that for the latter (or at least for a part thereof) I may revive and reintegrate the misapplied and abused name of natural magic, which in the true sense is but natural wisdom, or natural prudence; taken according to the ancient acception, purged from vanity and superstition. Now although it be true, and I know it well, that there is an intercourse between causes and effects, so as both these knowledges, speculative and operative, have a great connection between themselves; yet because all true and fruitful natural philosophy hath a double scale or ladder, ascendent and descendent, ascending from experiments to the invention of causes, and descending from causes to the invention of new experiments; therefore I judge it most requisite that these two parts be severally considered and handled.

(2) Natural science or theory is divided into physic and metaphysic; wherein I desire it may be conceived that I use the word metaphysic in a differing sense from that that is received. And in like manner, I doubt not but it will easily appear to men of judgment, that in this and other particulars, wheresoever my conception and notion may differ from the ancient, yet I am studious to keep the ancient terms. For hoping well to deliver myself from mistaking, by the order and perspicuous expressing of that I do propound, I am otherwise zealous and affectionate to recede as little from antiquity, either in terms or opinions, as may stand with truth and the proficience of knowledge. And herein I cannot a little marvel at the philosopher Aristotle, that did proceed in such a spirit of difference and contradiction towards all antiquity; undertaking not only to frame new words of science at pleasure, but to confound and extinguish all ancient wisdom; insomuch as he never nameth or mentioneth an ancient author or opinion, but to confute and reprove; wherein for glory, and drawing followers and disciples, he took the right course. For certainly there cometh to pass, and hath place in human truth, that which was noted and pronounced in the highest truth: — *Veni in nomine partis*, *nec recipits me*; *si quis venerit in nomine suo eum recipietis*. But in this divine aphorism (considering to whom it was applied, namely, to antichrist, the highest deceiver), we may discern well that the coming in a man's own name, without regard of antiquity or paternity, is no good sign of truth, although it be joined with the fortune and success of an *eum recipietis*. But for this excellent person Aristotle, I will think of him that he learned that humour of his scholar, with whom it seemeth he did emulate; the one to conquer all opinions, as the other to conquer all nations. Wherein, nevertheless, it may be, he may at some men's hands, that are of a bitter disposition, get a like title as his scholar did: —

"Felix terrarum prædo, non utile mundo
Editus exemplum, &c."

So,

"Felix doctrinæ prædo."

But to me, on the other side, that do desire as much as lieth in my pen to ground a sociable intercourse between antiquity and proficience, it seemeth best to keep way with antiquity *usque ad aras*; and, therefore, to retain the ancient terms, though I sometimes alter the uses and definitions, according to the moderate proceeding in civil government; where, although there be some alteration, yet that holdeth which Tacitus wisely noteth, *eadem magistratuum vocabula*.

(3) To return, therefore, to the use and acception of the term metaphysic as I do now understand the word; it appeareth, by that which hath been already said, that I intend *philosophia prima*, summary philosophy and metaphysic, which heretofore have been confounded as one, to be two distinct things. For the one I have made as a parent or common ancestor to all knowledge; and the other I have now brought in as a branch or descendant of natural science. It appeareth likewise that I have assigned to summary philosophy the common principles and axioms which are promiscuous and indifferent to several sciences; I have assigned unto it likewise the inquiry touching the operation or the relative and adventive characters of essences, as quantity, similitude, diversity, possibility, and the rest, with this distinction and provision; that they be handled as they have efficacy in nature, and not logically. It appeareth likewise that natural theology, which heretofore hath been handled confusedly with metaphysic, I have enclosed and bounded by itself. It is therefore now a question what is left remaining for metaphysic; wherein I may without prejudice preserve thus much of the conceit of antiquity, that physic should contemplate that which is inherent in matter, and therefore transitory; and metaphysic that which is abstracted and fixed. And again, that physic should handle that which supposeth in nature only a being and moving; and metaphysic should handle that which supposeth further in nature a reason, understanding, and platform. But the difference, perspicuously expressed, is most familiar and sensible. For as we divided natural philosophy in general into the inquiry of causes and productions of effects, so that part which concerneth the inquiry of causes we do subdivide

according to the received and sound division of causes. The one part, which is physic, inquireth and handleth the material and efficient causes; and the other, which is metaphysic, handleth the formal and final causes.

(4) Physic (taking it according to the derivation, and not according to our idiom for medicine) is situate in a middle term or distance between natural history and metaphysic. For natural history describeth the variety of things; physic the causes, but variable or respective causes; and metaphysic the fixed and constant causes.

"Limus ut hic durescit, et hæc ut cera liquescit,
Uno eodemque igni."

Fire is the cause of induration, but respective to clay; fire is the cause of colliquation, but respective to wax. But fire is no constant cause either of induration or colliquation; so then the physical causes are but the efficient and the matter. Physic hath three parts, whereof two respect nature united or collected, the third contemplateth nature diffused or distributed. Nature is collected either into one entire total, or else into the same principles or seeds. So as the first doctrine is touching the contexture or configuration of things, as *de mundo*, *de universitate rerum*. The second is the doctrine concerning the principles or originals of things. The third is the doctrine concerning all variety and particularity of things; whether it be of the differing substances, or their differing qualities and natures; whereof there needeth no enumeration, this part being but as a gloss or paraphrase that attendeth upon the text of natural history. Of these three I cannot report any as deficient. In what truth or perfection they are handled, I make not now any judgment; but they are parts of knowledge not deserted by the labour of man.

(5) For metaphysic, we have assigned unto it the inquiry of formal and final causes; which assignation, as to the former of them, may seem to be nugatory and void, because of the received and inveterate opinion, that the inquisition of man is not competent to find out essential forms or true differences; of which

opinion we will take this hold, that the invention of forms is of all other parts of knowledge the worthiest to be sought, if it be possible to be found. As for the possibility, they are ill discoverers that think there is no land, when they can see nothing but sea. But it is manifest that Plato, in his opinion of ideas, as one that had a wit of elevation situate as upon a cliff, did descry that forms were the true object of knowledge; but lost the real fruit of his opinion, by considering of forms as absolutely abstracted from matter, and not confined and determined by matter; and so turning his opinion upon theology, wherewith all his natural philosophy is infected. But if any man shall keep a continual watchful and severe eye upon action, operation, and the use of knowledge, he may advise and take notice what are the forms, the disclosures whereof are fruitful and important to the state of man. For as to the forms of substances (man only except, of whom it is said, *Formavit hominem de limo terræ*, *et spiravit in faciem ejus spiraculum vitæ*, and not as of all other creatures, *Producant aquæ*, *producat terra*), the forms of substances I say (as they are now by compounding and transplanting multiplied) are so perplexed, as they are not to be inquired; no more than it were either possible or to purpose to seek in gross the forms of those sounds which make words, which by composition and transposition of letters are infinite. But, on the other side, to inquire the form of those sounds or voices which make simple letters is easily comprehensible; and being known induceth and manifesteth the forms of all words, which consist and are compounded of them. In the same manner to inquire the form of a lion, of an oak, of gold; nay, of water, of air, is a vain pursuit; but to inquire the forms of sense, of voluntary motion, of vegetation, of colours, of gravity and levity, of density, of tenuity, of heat, of cold, and all other natures and qualities, which, like an alphabet, are not many, and of which the essences (upheld by matter) of all creatures do consist; to inquire, I say, the true forms of these, is that part of metaphysic which we now define of. Not but that physic doth make inquiry and take consideration of the same natures; but how? Only as to the material and efficient causes of them, and not as to the forms. For example, if the cause of whiteness in snow or froth be inquired, and it be rendered thus, that the subtle

intermixture of air and water is the cause, it is well rendered; but, nevertheless, is this the form of whiteness? No; but it is the efficient, which is ever but *vehiculum formæ*. This part of metaphysic I do not find laboured and performed; whereat I marvel not; because I hold it not possible to be invented by that course of invention which hath been used; in regard that men (which is the root of all error) have made too untimely a departure, and too remote a recess from particulars.

(6) But the use of this part of metaphysic, which I report as deficient, is of the rest the most excellent in two respects: the one, because it is the duty and virtue of all knowledge to abridge the infinity of individual experience, as much as the conception of truth will permit, and to remedy the complaint of *vita brevis*, *ars longa*; which is performed by uniting the notions and conceptions of sciences. For knowledges are as pyramids, whereof history is the basis. So of natural philosophy, the basis is natural history; the stage next the basis is physic; the stage next the vertical point is metaphysic. As for the vertical point, *opus quod operatur Deus à principio usque ad finem*, the summary law of nature, we know not whether man's inquiry can attain unto it. But these three be the true stages of knowledge, and are to them that are depraved no better than the giants' hills: —

"Ter sunt conati imponere Pelio Ossam,
Scilicet atque Ossæ frondsum involvere Olympum."

But to those which refer all things to the glory of God, they are as the three acclamations, *Sante*, *sancte*, *sancte*! holy in the description or dilatation of His works; holy in the connection or concatenation of them; and holy in the union of them in a perpetual and uniform law. And, therefore, the speculation was excellent in Parmenides and Plato, although but a speculation in them, that all things by scale did ascend to unity. So then always that knowledge is worthiest which is charged with least multiplicity, which appeareth to be metaphysic; as that which considereth the simple forms or differences of things, which are few

in number, and the degrees and co-ordinations whereof make all this variety. The second respect, which valueth and commendeth this part of metaphysic, is that it doth enfranchise the power of man unto the greatest liberty and possibility of works and effects. For physic carrieth men in narrow and restrained ways, subject to many accidents and impediments, imitating the ordinary flexuous courses of nature. But *latæ undique sunt sapientibus viæ*; to sapience (which was anciently defined to be *rerum divinarum et humanarum scientia*) there is ever a choice of means. For physical causes give light to new invention in *simili materia*. But whosoever knoweth any form, knoweth the utmost possibility of superinducing that nature upon any variety of matter; and so is less restrained in operation, either to the basis of the matter, or the condition of the efficient; which kind of knowledge Solomon likewise, though in a more divine sense, elegantly describeth: *non arctabuntur gressus tui*, *et currens non habebis offendiculum*. The ways of sapience are not much liable either to particularity or chance.

(7) The second part of metaphysic is the inquiry of final causes, which I am moved to report not as omitted, but as misplaced. And yet if it were but a fault in order, I would not speak of it; for order is matter of illustration, but pertaineth not to the substance of sciences. But this misplacing hath caused a deficience, or at least a great improficience in the sciences themselves. For the handling of final causes, mixed with the rest in physical inquiries, hath intercepted the severe and diligent inquiry of all real and physical causes, and given men the occasion to stay upon these satisfactory and specious causes, to the great arrest and prejudice of further discovery. For this I find done not only by Plato, who ever anchoreth upon that shore, but by Aristotle, Galen, and others which do usually likewise fall upon these flats of discoursing causes. For to say that "the hairs of the eyelids are for a quickset and fence about the sight;" or that "the firmness of the skins and hides of living creatures is to defend them from the extremities of heat or cold;" or that "the bones are for the columns or beams, whereupon the frames of the bodies of living creatures are built;" or that "the leaves of trees are for protecting of the fruit;" or that "the clouds are for watering of the earth;" or

that “the solidness of the earth is for the station and mansion of living creatures;” and the like, is well inquired and collected in metaphysic, but in physic they are impertinent. Nay, they are, indeed, but *remoras* and hindrances to stay and slug the ship from further sailing; and have brought this to pass, that the search of the physical causes hath been neglected and passed in silence. And, therefore, the natural philosophy of Democritus and some others, who did not suppose a mind or reason in the frame of things, but attributed the form thereof able to maintain itself to infinite essays or proofs of Nature, which they term fortune, seemeth to me (as far as I can judge by the recital and fragments which remain unto us) in particularities of physical causes more real and better inquired than that of Aristotle and Plato; whereof both intermingled final causes, the one as a part of theology, and the other as a part of logic, which were the favourite studies respectively of both those persons; not because those final causes are not true and worthy to be inquired, being kept within their own province, but because their excursions into the limits of physical causes hath bred a vastness and solitude in that tract. For otherwise, keeping their precincts and borders, men are extremely deceived if they think there is an enmity or repugnancy at all between them. For the cause rendered, that “the hairs about the eyelids are for the safeguard of the sight,” doth not impugn the cause rendered, that “pilosity is incident to orifices of moisture — *muscosi fontes*, &c.” Nor the cause rendered, that “the firmness of hides is for the armour of the body against extremities of heat or cold,” doth not impugn the cause rendered, that “contraction of pores is incident to the outwardest parts, in regard of their adjacence to foreign or unlike bodies;” and so of the rest, both causes being true and compatible, the one declaring an intention, the other a consequence only. Neither doth this call in question or derogate from Divine Providence, but highly confirm and exalt it. For as in civil actions he is the greater and deeper politique that can make other men the instruments of his will and ends, and yet never acquaint them with his purpose, so as they shall do it and yet not know what they do, than he that imparteth his meaning to those he employeth; so is the wisdom of God more admirable, when Nature intendeth one thing and Providence draweth forth

another, than if He had communicated to particular creatures and motions the characters and impressions of His Providence. And thus much for metaphysic; the latter part whereof I allow as extant, but wish it confined to his proper place.

VIII. (1) Nevertheless, there remaineth yet another part of natural philosophy, which is commonly made a principal part, and holdeth rank with physic special and metaphysic, which is mathematic; but I think it more agreeable to the nature of things, and to the light of order, to place it as a branch of metaphysic. For the subject of it being quantity, not quantity indefinite, which is but a relative, and belongeth to *philosophia prima* (as hath been said), but quantity determined or proportionable, it appeareth to be one of the essential forms of things, as that that is causative in Nature of a number of effects; insomuch as we see in the schools both of Democritus and of Pythagoras that the one did ascribe figure to the first seeds of things, and the other did suppose numbers to be the principles and originals of things. And it is true also that of all other forms (as we understand forms) it is the most abstracted and separable from matter, and therefore most proper to metaphysic; which hath likewise been the cause why it hath been better laboured and inquired than any of the other forms, which are more immersed in matter. For it being the nature of the mind of man (to the extreme prejudice of knowledge) to delight in the spacious liberty of generalities, as in a champaign region, and not in the inclosures of particularity, the mathematics of all other knowledge were the goodliest fields to satisfy that appetite. But for the placing of this science, it is not much material: only we have endeavoured in these our partitions to observe a kind of perspective, that one part may cast light upon another.

(2) The mathematics are either pure or mixed. To the pure mathematics are those sciences belonging which handle quantity determinate, merely severed from any axioms of natural philosophy; and these are two, geometry and arithmetic, the one handling quantity continued, and the other dissevered. Mixed hath for subject some axioms or parts of natural philosophy, and considereth quantity determined, as it is auxiliary and incident unto them. For many parts of Nature can neither be invented with sufficient subtlety, nor demonstrated with

sufficient perspicuity, nor accommodated unto use with sufficient dexterity, without the aid and intervening of the mathematics, of which sort are perspective, music, astronomy, cosmography, architecture, engineery, and divers others. In the mathematics I can report no deficience, except it be that men do not sufficiently understand this excellent use of the pure mathematics, in that they do remedy and cure many defects in the wit and faculties intellectual. For if the wit be too dull, they sharpen it; if too wandering, they fix it; if too inherent in the sense, they abstract it. So that as tennis is a game of no use in itself, but of great use in respect it maketh a quick eye and a body ready to put itself into all postures, so in the mathematics that use which is collateral and intervenient is no less worthy than that which is principal and intended. And as for the mixed mathematics, I may only make this prediction, that there cannot fail to be more kinds of them as Nature grows further disclosed. Thus much of natural science, or the part of Nature speculative.

(3) For natural prudence, or the part operative of natural philosophy, we will divide it into three parts — experimental, philosophical, and magical; which three parts active have a correspondence and analogy with the three parts speculative, natural history, physic, and metaphysic. For many operations have been invented, sometimes by a casual incidence and occurrence, sometimes by a purposed experiment; and of those which have been found by an intentional experiment, some have been found out by varying or extending the same experiment, some by transferring and compounding divers experiments the one into the other, which kind of invention an empiric may manage. Again, by the knowledge of physical causes there cannot fail to follow many indications and designations of new particulars, if men in their speculation will keep one eye upon use and practice. But these are but coastings along the shore, *premendo littus iniquum*; for it seemeth to me there can hardly be discovered any radical or fundamental alterations and innovations in Nature, either by the fortune and essays of experiments, or by the light and direction of physical causes. If, therefore, we have reported metaphysic deficient, it must follow that we do the like of natural magic, which hath relation thereunto. For as for the natural magic

whereof now there is mention in books, containing certain credulous and superstitious conceits and observations of sympathies and antipathies, and hidden proprieties, and some frivolous experiments, strange rather by disguisement than in themselves, it is as far differing in truth of Nature from such a knowledge as we require as the story of King Arthur of Britain, or Hugh of Bourdeaux, differs from Cæsar's Commentaries in truth of story; for it is manifest that Cæsar did greater things *de vero* than those imaginary heroes were feigned to do. But he did them not in that fabulous manner. Of this kind of learning the fable of Ixion was a figure, who designed to enjoy Juno, the goddess of power, and instead of her had copulation with a cloud, of which mixture were begotten centaurs and chimeras. So whosoever shall entertain high and vaporous imaginations, instead of a laborious and sober inquiry of truth, shall beget hopes and beliefs of strange and impossible shapes. And, therefore, we may note in these sciences which hold so much of imagination and belief, as this degenerate natural magic, alchemy, astrology, and the like, that in their propositions the description of the means is ever more monstrous than the pretence or end. For it is a thing more probable that he that knoweth well the natures of weight, of colour, of pliant and fragile in respect of the hammer, of volatile and fixed in respect of the fire, and the rest, may superinduce upon some metal the nature and form of gold by such mechanic as longeth to the production of the natures afore rehearsed, than that some grains of the medicine projected should in a few moments of time turn a sea of quicksilver or other material into gold. So it is more probable that he that knoweth the nature of arefaction, the nature of assimilation of nourishment to the thing nourished, the manner of increase and clearing of spirits, the manner of the depredations which spirits make upon the humours and solid parts, shall by ambages of diets, bathings, anointings, medicines, motions, and the like, prolong life, or restore some degree of youth or vivacity, than that it can be done with the use of a few drops or scruples of a liquor or receipt. To conclude, therefore, the true natural magic, which is that great liberty and latitude of operation which dependeth upon the knowledge of forms, I may report deficient, as the relative thereof is. To which part, if we be

serious and incline not to vanities and plausible discourse, besides the deriving and deducing the operations themselves from metaphysic, there are pertinent two points of much purpose, the one by way of preparation, the other by way of caution. The first is, that there be made a calendar, resembling an inventory of the estate of man, containing all the inventions (being the works or fruits of Nature or art) which are now extant, and whereof man is already possessed; out of which doth naturally result a note what things are yet held impossible, or not invented, which calendar will be the more artificial and serviceable if to every reputed impossibility you add what thing is extant which cometh the nearest in degree to that impossibility; to the end that by these optatives and potentials man's inquiry may be the more awake in deducing direction of works from the speculation of causes. And secondly, that these experiments be not only esteemed which have an immediate and present use, but those principally which are of most universal consequence for invention of other experiments, and those which give most light to the invention of causes; for the invention of the mariner's needle, which giveth the direction, is of no less benefit for navigation than the invention of the sails which give the motion.

(4) Thus have I passed through natural philosophy and the deficiences thereof; wherein if I have differed from the ancient and received doctrines, and thereby shall move contradiction, for my part, as I affect not to dissent, so I purpose not to contend. If it be truth,

"Non canimus surdis, respondent omnia sylvæ,"

the voice of Nature will consent, whether the voice of man do or no. And as Alexander Borgia was wont to say of the expedition of the French for Naples, that they came with chalk in their hands to mark up their lodgings, and not with weapons to fight; so I like better that entry of truth which cometh peaceably with chalk to mark up those minds which are capable to lodge and harbour it, than that which cometh with pugnacity and contention.

(5) But there remaineth a division of natural philosophy according to the report of the inquiry, and nothing concerning the matter or subject: and that is positive and considerative, when the inquiry reporteth either an assertion or a

doubt. These doubts or *non liquets* are of two sorts, particular and total. For the first, we see a good example thereof in Aristotle's Problems which deserved to have had a better continuance; but so nevertheless as there is one point whereof warning is to be given and taken. The registering of doubts hath two excellent uses: the one, that it saveth philosophy from errors and falsehoods; when that which is not fully appearing is not collected into assertion, whereby error might draw error, but reserved in doubt; the other, that the entry of doubts are as so many suckers or sponges to draw use of knowledge; insomuch as that which if doubts had not preceded, a man should never have advised, but passed it over without note, by the suggestion and solicitation of doubts is made to be attended and applied. But both these commodities do scarcely countervail and inconvenience, which will intrude itself if it be not debarred; which is, that when a doubt is once received, men labour rather how to keep it a doubt still, than how to solve it, and accordingly bend their wits. Of this we see the familiar example in lawyers and scholars, both which, if they have once admitted a doubt, it goeth ever after authorised for a doubt. But that use of wit and knowledge is to be allowed, which laboureth to make doubtful things certain, and not those which labour to make certain things doubtful. Therefore these calendars of doubts I commend as excellent things; so that there he this caution used, that when they be thoroughly sifted and brought to resolution, they be from thenceforth omitted, discarded, and not continued to cherish and encourage men in doubting. To which calendar of doubts or problems I advise be annexed another calendar, as much or more material which is a calendar of popular errors: I mean chiefly in natural history, such as pass in speech and conceit, and are nevertheless apparently detected and convicted of untruth, that man's knowledge be not weakened nor embased by such dross and vanity. As for the doubts or *non liquets* general or in total, I understand those differences of opinions touching the principles of nature, and the fundamental points of the same, which have caused the diversity of sects, schools, and philosophies, as that of Empedocles, Pythagoras, Democritus, Parmenides, and the rest. For although Aristotle, as though he had been of the race of the Ottomans, thought he could not reign

except the first thing he did he killed all his brethren; yet to those that seek truth and not magistrality, it cannot but seem a matter of great profit, to see before them the several opinions touching the foundations of nature. Not for any exact truth that can be expected in those theories; for as the same phenomena in astronomy are satisfied by this received astronomy of the diurnal motion, and the proper motions of the planets, with their eccentrics and epicycles, and likewise by the theory of Copernicus, who supposed the earth to move, and the calculations are indifferently agreeable to both, so the ordinary face and view of experience is many times satisfied by several theories and philosophies; whereas to find the real truth requireth another manner of severity and attention. For as Aristotle saith, that children at the first will call every woman mother, but afterward they come to distinguish according to truth, so experience, if it be in childhood, will call every philosophy mother, but when it cometh to ripeness it will discern the true mother. So as in the meantime it is good to see the several glosses and opinions upon Nature, whereof it may be everyone in some one point hath seen clearer than his fellows, therefore I wish some collection to be made painfully and understandingly *de antiquis philosophiis*, out of all the possible light which remaineth to us of them: which kind of work I find deficient. But here I must give warning, that it be done distinctly and severedly; the philosophies of everyone throughout by themselves, and not by titles packed and faggoted up together, as hath been done by Plutarch. For it is the harmony of a philosophy in itself, which giveth it light and credence; whereas if it be singled and broken, it will seem more foreign and dissonant. For as when I read in Tacitus the actions of Nero or Claudius, with circumstances of times, inducements, and occasions, I find them not so strange; but when I read them in Suetonius Tranquillus, gathered into titles and bundles and not in order of time, they seem more monstrous and incredible: so is it of any philosophy reported entire, and dismembered by articles. Neither do I exclude opinions of latter times to be likewise represented in this calendar of sects of philosophy, as that of Theophrastus Paracelsus, eloquently reduced into an harmony by the pen of Severinus the Dane; and that of Tilesius, and his scholar Donius, being as a

pastoral philosophy, full of sense, but of no great depth; and that of Fracastorius, who, though he pretended not to make any new philosophy, yet did use the absoluteness of his own sense upon the old; and that of Gilbertus our countryman, who revived, with some alterations and demonstrations, the opinions of Xenophanes; and any other worthy to be admitted.

(6) Thus have we now dealt with two of the three beams of man's knowledge; that is *radius directus*, which is referred to nature, *radius refractus*, which is referred to God, and cannot report truly because of the inequality of the medium. There resteth *radius reflexus*, whereby man beholdeth and contemplateth himself.

IX. (1) We come therefore now to that knowledge whereunto the ancient oracle directeth us, which is the knowledge of ourselves; which deserveth the more accurate handling, by how much it toucheth us more nearly. This knowledge, as it is the end and term of natural philosophy in the intention of man, so notwithstanding it is but a portion of natural philosophy in the continent of Nature. And generally let this be a rule, that all partitions of knowledges be accepted rather for lines and veins than for sections and separations; and that the continuance and entireness of knowledge be preserved. For the contrary hereof hath made particular sciences to become barren, shallow, and erroneous, while they have not been nourished and maintained from the common fountain. So we see Cicero, the orator, complained of Socrates and his school, that he was the first that separated philosophy and rhetoric; whereupon rhetoric became an empty and verbal art. So we may see that the opinion of Copernicus, touching the rotation of the earth, which astronomy itself cannot correct, because it is not repugnant to any of the *phenomena*, yet natural philosophy may correct. So we see also that the science of medicine if it be destituted and forsaken by natural philosophy, it is not much better than an empirical practice. With this reservation, therefore, we proceed to human philosophy or humanity, which hath two parts: the one considereth man segregate or distributively, the other congregate or in society; so as human philosophy is either simple and particular, or conjugate and civil. Humanity particular consisteth of the same parts whereof

man consisteth: that is, of knowledges which respect the body, and of knowledges that respect the mind. But before we distribute so far, it is good to constitute. For I do take the consideration in general, and at large, of human nature to be fit to be emancipate and made a knowledge by itself, not so much in regard of those delightful and elegant discourses which have been made of the dignity of man, of his miseries, of his state and life, and the like adjuncts of his common and undivided nature; but chiefly in regard of the knowledge concerning the sympathies and concordances between the mind and body, which being mixed cannot be properly assigned to the sciences of either.

(2) This knowledge hath two branches: for as all leagues and amities consist of mutual intelligence and mutual offices, so this league of mind and body hath these two parts: how the one discloseth the other, and how the one worketh upon the other; discovery and impression. The former of these hath begotten two arts, both of prediction or prenotion; whereof the one is honoured with the inquiry of Aristotle, and the other of Hippocrates. And although they have of later time been used to be coupled with superstitions and fantastical arts, yet being purged and restored to their true state, they have both of them a solid ground in Nature, and a profitable use in life. The first is physiognomy, which discovereth the disposition of the mind by the lineaments of the body. The second is the exposition of natural dreams, which discovereth the state of the body by the imaginations of the mind. In the former of these I note a deficience. For Aristotle hath very ingeniously and diligently handled the factures of the body, but not the gestures of the body, which are no less comprehensible by art, and of greater use and advantage. For the lineaments of the body do disclose the disposition and inclination of the mind in general; but the motions of the countenance and parts do not only so, but do further disclose the present humour and state of the mind and will. For as your majesty saith most aptly and elegantly, “As the tongue speaketh to the ear so the gesture speaketh to the eye.” And, therefore, a number of subtle persons, whose eyes do dwell upon the faces and fashions of men, do well know the advantage of this observation, as being

most part of their ability; neither can it be denied, but that it is a great discovery of dissimulations, and a great direction in business.

(3) The latter branch, touching impression, hath not been collected into art, but hath been handled dispersedly; and it hath the same relation or *antistrophe* that the former hath. For the consideration is double — either how and how far the humours and affects of the body do alter or work upon the mind, or, again, how and how far the passions or apprehensions of the mind do alter or work upon the body. The former of these hath been inquired and considered as a part and appendix of medicine, but much more as a part of religion or superstition. For the physician prescribeth cures of the mind in frenzies and melancholy passions, and pretendeth also to exhibit medicines to exhilarate the mind, to control the courage, to clarify the wits, to corroborate the memory, and the like; but the scruples and superstitions of diet and other regiment of the body in the sect of the Pythagoreans, in the heresy of the Manichees, and in the law of Mahomet, do exceed. So likewise the ordinances in the ceremonial law, interdicting the eating of the blood and the fat, distinguishing between beasts clean and unclean for meat, are many and strict; nay, the faith itself being clear and serene from all clouds of ceremony, yet retaineth the use of fastlings, abstinences, and other macerations and humiliations of the body, as things real, and not figurative. The root and life of all which prescripts is (besides the ceremony) the consideration of that dependency which the affections of the mind are submitted unto upon the state and disposition of the body. And if any man of weak judgment do conceive that this suffering of the mind from the body doth either question the immortality, or derogate from the sovereignty of the soul, he may be taught, in easy instances, that the infant in the mother's womb is compatible with the mother, and yet separable; and the most absolute monarch is sometimes led by his servants, and yet without subjection. As for the reciprocal knowledge, which is the operation of the conceits and passions of the mind upon the body, we see all wise physicians, in the prescriptions of their regiments to their patients, do ever consider *accidentia animi*, as of great force to further or hinder remedies or recoveries: and more specially it is an inquiry of great depth

and worth concerning imagination, how and how far it altereth the body proper of the imaginant; for although it hath a manifest power to hurt, it followeth not it hath the same degree of power to help. No more than a man can conclude, that because there be pestilent airs, able suddenly to kill a man in health, therefore there should be sovereign airs, able suddenly to cure a man in sickness. But the inquisition of this part is of great use, though it needeth, as Socrates said, "a Delian diver," being difficult and profound. But unto all this knowledge *de communi vinculo*, of the concordances between the mind and the body, that part of inquiry is most necessary which considereth of the seats and domiciles which the several faculties of the mind do take and occupate in the organs of the body; which knowledge hath been attempted, and is controverted, and deserveth to be much better inquired. For the opinion of Plato, who placed the understanding in the brain, animosity (which he did unfitly call anger, having a greater mixture with pride) in the heart, and concupiscence or sensuality in the liver, deserveth not to be despised, but much less to be allowed. So, then, we have constituted (as in our own wish and advice) the inquiry touching human nature entire, as a just portion of knowledge to be handled apart.

X. (1) The knowledge that concerneth man's body is divided as the good of man's body is divided, unto which it referreth. The good of man's body is of four kinds — health, beauty, strength, and pleasure: so the knowledges are medicine, or art of cure; art of decoration, which is called cosmetic; art of activity, which is called athletic; and art voluptuary, which Tacitus truly calleth *eruditus luxus*. This subject of man's body is, of all other things in nature, most susceptible of remedy; but then that remedy is most susceptible of error; for the same subtlety of the subject doth cause large possibility and easy failing, and therefore the inquiry ought to be the more exact.

(2) To speak, therefore, of medicine, and to resume that we have said, ascending a little higher: the ancient opinion that man was *microcosmus* — an abstract or model of the world — hath been fantastically strained by Paracelsus and the alchemists, as if there were to be found in man's body certain correspondences and parallels, which should have respect to all varieties of

things, as stars, planets, minerals, which are extant in the great world. But thus much is evidently true, that of all substances which nature hath produced, man's body is the most extremely compounded. For we see herbs and plants are nourished by earth and water; beasts for the most part by herbs and fruits; man by the flesh of beasts, birds, fishes, herbs, grains, fruits, water, and the manifold alterations, dressings, and preparations of these several bodies before they come to be his food and aliment. Add hereunto that beasts have a more simple order of life, and less change of affections to work upon their bodies, whereas man in his mansion, sleep, exercise, passions, hath infinite variations: and it cannot be denied but that the body of man of all other things is of the most compounded mass. The soul, on the other side, is the simplest of substances, as is well expressed:

"Purumque reliquit
Æthereum sensum atque auraï simplicis ignem."

So that it is no marvel though the soul so placed enjoy no rest, if that principle be true, that *Motus rerum est rapidus extra locum*, *placidus in loco*. But to the purpose. This variable composition of man's body hath made it as an instrument easy to distemper; and, therefore, the poets did well to conjoin music and medicine in Apollo, because the office of medicine is but to tune this curious harp of man's body and to reduce it to harmony. So, then, the subject being so variable hath made the art by consequent more conjectural; and the art being conjectural hath made so much the more place to be left for imposture. For almost all other arts and sciences are judged by acts or masterpieces, as I may term them, and not by the successes and events. The lawyer is judged by the virtue of his pleading, and not by the issue of the cause; this master in this ship is judged by the directing his course aright, and not by the fortune of the voyage; but the physician, and perhaps this politique, hath no particular acts demonstrative of his ability, but is judged most by the event, which is ever but as it is taken: for who can tell, if a patient die or recover, or if a state be preserved

or ruined, whether it be art or accident? And therefore many times the impostor is prized, and the man of virtue taxed. Nay, we see [the] weakness and credulity of men is such, as they will often refer a mountebank or witch before a learned physician. And therefore the poets were clear-sighted in discerning this extreme folly when they made Æsculapius and Circe, brother and sister, both children of the sun, as in the verses —

"Ipse repertorem medicinæ talis et artis
Fulmine Phœbigenam Stygias detrusit ad undas."

And again —

"Dives inaccessos ubi Solis filia lucos," &c.

For in all times, in the opinion of the multitude, witches and old women and impostors, have had a competition with physicians. And what followeth? Even this, that physicians say to themselves, as Solomon expresseth it upon a higher occasion, "If it befall to me as befalleth to the fools, why should I labour to be more wise?" And therefore I cannot much blame physicians that they use commonly to intend some other art or practice, which they fancy more than their profession; for you shall have of them antiquaries, poets, humanists, statesmen, merchants, divines, and in every of these better seen than in their profession; and no doubt upon this ground that they find that mediocrity and excellency in their art maketh no difference in profit or reputation towards their fortune: for the weakness of patients, and sweetness of life, and nature of hope, maketh men depend upon physicians with all their defects. But, nevertheless, these things which we have spoken of are courses begotten between a little occasion and a great deal of sloth and default; for if we will excite and awake our observation, we shall see in familiar instances what a predominant faculty the subtlety of spirit hath over the variety of matter or form. Nothing more variable than faces and countenances, yet men can bear in memory the infinite distinctions of them; nay, a painter, with a few shells of colours, and the benefit of his eye, and habit of his imagination, can imitate them all that ever have been, are, or may be, if

they were brought before him. Nothing more variable than voices, yet men can likewise discern them personally: nay, you shall have a *buffon* or *pantomimus* will express as many as he pleaseth. Nothing more variable than the differing sounds of words; yet men have found the way to reduce them to a few simple letters. So that it is not the insufficiency or incapacity of man's mind, but it is the remote standing or placing thereof that breedeth these mazes and incomprehensions; for as the sense afar off is full of mistaking, but is exact at hand, so is it of the understanding, the remedy whereof is, not to quicken or strengthen the organ, but to go nearer to the object; and therefore there is no doubt but if the physicians will learn and use the true approaches and avenues of nature, they may assume as much as the poet saith:

"Et quoniam variant morbi, variabimus artes;
Mille mali species, mille salutis erunt."

Which that they should do, the nobleness of their art doth deserve: well shadowed by the poets, in that they made Æsculapius to be the son of [the] sun, the one being the fountain of life, the other as the second-stream; but infinitely more honoured by the example of our Saviour, who made the body of man the object of His miracles, as the soul was the object of His doctrine. For we read not that ever He vouchsafed to do any miracle about honour or money (except that one for giving tribute to Cæsar), but only about the preserving, sustaining, and healing the body of man.

(3) Medicine is a science which hath been (as we have said) more professed than laboured, and yet more laboured than advanced; the labour having been, in my judgment, rather in circle than in progression. For I find much iteration, but small addition. It considereth causes of diseases, with the occasions or impulsions; the diseases themselves, with the accidents; and the cures, with the preservations. The deficiences which I think good to note, being a few of many, and those such as are of a more open and manifest nature, I will enumerate and not place.

(4) The first is the discontinuance of the ancient and serious diligence of Hippocrates, which used to set down a narrative of the special cases of his patients, and how they proceeded, and how they were judged by recovery or death. Therefore having an example proper in the father of the art, I shall not need to allege an example foreign, of the wisdom of the lawyers, who are careful to report new cases and decisions, for the direction of future judgments. This continuance of medicinal history I find deficient; which I understand neither to be so infinite as to extend to every common case, nor so reserved as to admit none but wonders: for many things are new in this manner, which are not new in the kind; and if men will intend to observe, they shall find much worthy to observe.

(5) In the inquiry which is made by anatomy, I find much deficience: for they inquire of the parts, and their substances, figures, and collocations; but they inquire not of the diversities of the parts, the secrecies of the passages, and the seats or nestling of the humours, nor much of the footsteps and impressions of diseases. The reason of which omission I suppose to be, because the first inquiry may be satisfied in the view of one or a few anatomies; but the latter, being comparative and casual, must arise from the view of many. And as to the diversity of parts, there is no doubt but the facture or framing of the inward parts is as full of difference as the outward, and in that is the cause continent of many diseases; which not being observed, they quarrel many times with the humours, which are not in fault; the fault being in the very frame and mechanic of the part, which cannot be removed by medicine alterative, but must be accommodated and palliated by diets and medicines familiar. And for the passages and pores, it is true which was anciently noted, that the more subtle of them appear not in anatomies, because they are shut and latent in dead bodies, though they be open and manifest in life: which being supposed, though the inhumanity of *anatomia vivorum* was by Celsus justly reproved; yet in regard of the great use of this observation, the inquiry needed not by him so slightly to have been relinquished altogether, or referred to the casual practices of surgery; but might have been well diverted upon the dissection of beasts alive, which notwithstanding the

dissimilitude of their parts may sufficiently satisfy this inquiry. And for the humours, they are commonly passed over in anatomies as purgaments; whereas it is most necessary to observe, what cavities, nests, and receptacles the humours do find in the parts, with the differing kind of the humour so lodged and received. And as for the footsteps of diseases, and their devastations of the inward parts, impostumations, exulcerations, discontinuations, putrefactions, consumptions, contractions, extensions, convulsions, dislocations, obstructions, repletions, together with all preternatural substances, as stones, carnosities, excrescences, worms, and the like; they ought to have been exactly observed by multitude of anatomies, and the contribution of men's several experiences, and carefully set down both historically according to the appearances, and artificially with a reference to the diseases and symptoms which resulted from them, in case where the anatomy is of a defunct patient; whereas now upon opening of bodies they are passed over slightly and in silence.

(6) In the inquiry of diseases, they do abandon the cures of many, some as in their nature incurable, and others as past the period of cure; so that Sylla and the Triumvirs never proscribed so many men to die, as they do by their ignorant edicts: whereof numbers do escape with less difficulty than they did in the Roman prescriptions. Therefore I will not doubt to note as a deficience, that they inquire not the perfect cures of many diseases, or extremities of diseases; but pronouncing them incurable do enact a law of neglect, and exempt ignorance from discredit.

(7) Nay further, I esteem it the office of a physician not only to restore health, but to mitigate pain and dolors; and not only when such mitigation may conduce to recovery, but when it may serve to make a fair and easy passage. For it is no small felicity which Augustus Cæsar was wont to wish to himself, that same *Euthanasia*; and which was specially noted in the death of Antoninus Pius, whose death was after the fashion, and semblance of a kindly and pleasant sheep. So it is written of Epicurus, that after his disease was judged desperate, he drowned his stomach and senses with a large draught and ingurgitation of wine; whereupon the epigram was made, *Hinc Stygias ebrius hausit aquas*; he

was not sober enough to taste any bitterness of the Stygian water. But the physicians contrariwise do make a kind of scruple and religion to stay with the patient after the disease is deplored; whereas in my judgment they ought both to inquire the skill, and to give the attendances, for the facilitating and assuaging of the pains and agonies of death.

(5) In the consideration of the cures of diseases, I find a deficience in the receipts of propriety, respecting the particular cures of diseases: for the physicians have frustrated the fruit of tradition and experience by their magistralities, in adding and taking out and changing *quid pro qua* in their receipts, at their pleasures; commanding so over the medicine, as the medicine cannot command over the disease. For except it be treacle and *mithridatum*, and of late *diascordium*, and a few more, they tie themselves to no receipts severely and religiously. For as to the confections of sale which are in the shops, they are for readiness and not for propriety. For they are upon general intentions of purging, opening, comforting, altering, and not much appropriate to particular diseases. And this is the cause why empirics and old women are more happy many times in their cures than learned physicians, because they are more religious in holding their medicines. Therefore here is the deficience which I find, that physicians have not, partly out of their own practice, partly out of the constant probations reported in books, and partly out of the traditions of empirics, set down and delivered over certain experimental medicines for the cure of particular diseases, besides their own conjectural and magistral descriptions. For as they were the men of the best composition in the state of Rome, which either being consuls inclined to the people, or being tribunes inclined to the senate; so in the matter we now handle, they be the best physicians, which being learned incline to the traditions of experience, or being empirics incline to the methods of learning.

(9) In preparation of medicines I do find strange, specially considering how mineral medicines have been extolled, and that they are safer for the outward than inward parts, that no man hath sought to make an imitation by art of natural baths and medicinable fountains: which nevertheless are confessed to receive

their virtues from minerals; and not so only, but discerned and distinguished from what particular mineral they receive tincture, as sulphur, vitriol, steel, or the like; which nature, if it may be reduced to compositions of art, both the variety of them will be increased, and the temper of them will be more commanded.

(10) But lest I grow to be more particular than is agreeable either to my intention or to proportion, I will conclude this part with the note of one deficience more, which seemeth to me of greatest consequence: which is, that the prescripts in use are too compendious to attain their end; for, to my understanding, it is a vain and flattering opinion to think any medicine can be so sovereign or so happy, as that the receipt or miss of it can work any great effect upon the body of man. It were a strange speech which spoken, or spoken oft, should reclaim a man from a vice to which he were by nature subject. It is order, pursuit, sequence, and interchange of application, which is mighty in nature; which although it require more exact knowledge in prescribing, and more precise obedience in observing, yet is recompensed with the magnitude of effects. And although a man would think, by the daily visitations of the physicians, that there were a pursuance in the cure, yet let a man look into their prescripts and ministrations, and he shall find them but inconstancies and every day's devices, without any settled providence or project. Not that every scrupulous or superstitious prescript is effectual, no more than every straight way is the way to heaven; but the truth of the direction must precede severity of observance.

(11) For cosmetic, it hath parts civil, and parts effeminate: for cleanness of body was ever esteemed to proceed from a due reverence to God, to society, and to ourselves. As for artificial decoration, it is well worthy of the deficiences which it hath; being neither fine enough to deceive, nor handsome to use, nor wholesome to please.

(12) For athletic, I take the subject of it largely, that is to say, for any point of ability whereunto the body of man may be brought, whether it be of activity, or of patience; whereof activity hath two parts, strength and swiftness; and patience likewise hath two parts, hardness against wants and extremities, and endurance

of pain or torment; whereof we see the practices in tumblers, in savages, and in those that suffer punishment. Nay, if there be any other faculty which falls not within any of the former divisions, as in those that dive, that obtain a strange power of containing respiration, and the like, I refer it to this part. Of these things the practices are known, but the philosophy that concerneth them is not much inquired; the rather, I think, because they are supposed to be obtained, either by an aptness of nature, which cannot be taught, or only by continual custom, which is soon prescribed which though it be not true, yet I forbear to note any deficiences; for the Olympian games are down long since, and the mediocrity of these things is for use; as for the excellency of them it serveth for the most part but for mercenary ostentation.

(13) For arts of pleasure sensual, the chief deficience in them is of laws to repress them. For as it hath been well observed, that the arts which flourish in times while virtue is in growth, are military; and while virtue is in state, are liberal; and while virtue is in declination, are voluptuary: so I doubt that this age of the world is somewhat upon the descent of the wheel. With arts voluptuary I couple practices joculary; for the deceiving of the senses is one of the pleasures of the senses. As for games of recreation, I hold them to belong to civil life and education. And thus much of that particular human philosophy which concerns the body, which is but the tabernacle of the mind.

XI. (1) For human knowledge which concerns the mind, it hath two parts; the one that inquireth of the substance or nature of the soul or mind, the other that inquireth of the faculties or functions thereof. Unto the first of these, the considerations of the original of the soul, whether it be native or adventive, and how far it is exempted from laws of matter, and of the immortality thereof, and many other points, do appertain: which have been not more laboriously inquired than variously reported; so as the travail therein taken seemeth to have been rather in a maze than in a way. But although I am of opinion that this knowledge may be more really and soundly inquired, even in nature, than it hath been, yet I hold that in the end it must be hounded by religion, or else it will be subject to deceit and delusion. For as the substance of the soul in the creation was not

extracted out of the mass of heaven and earth by the benediction of a *producat*, but was immediately inspired from God, so it is not possible that it should be (otherwise than by accident) subject to the laws of heaven and earth, which are the subject of philosophy; and therefore the true knowledge of the nature and state of the soul must come by the same inspiration that gave the substance. Unto this part of knowledge touching the soul there be two appendices; which, as they have been handled, have rather vapoured forth fables than kindled truth: divination and fascination.

(2) Divination hath been anciently and fitly divided into artificial and natural: whereof artificial is, when the mind maketh a prediction by argument, concluding upon signs and tokens; natural is, when the mind hath a presention by an internal power, without the inducement of a sign. Artificial is of two sorts: either when the argument is coupled with a derivation of causes, which is rational; or when it is only grounded upon a coincidence of the effect, which is experimental: whereof the latter for the most part is superstitious, such as were the heathen observations upon the inspection of sacrifices, the flights of birds, the swarming of bees; and such as was the Chaldean astrology, and the like. For artificial divination, the several kinds thereof are distributed amongst particular knowledges. The astronomer hath his predictions, as of conjunctions, aspects, eclipses, and the like. The physician hath his predictions, of death, of recovery, of the accidents and issues of diseases. The politique hath his predictions; *O urbem venalem*, *et cito perituram*, *si emptorem invenerit*! which stayed not long to be performed, in Sylla first, and after in Cæsar: so as these predictions are now impertinent, and to be referred over. But the divination which springeth from the internal nature of the soul is that which we now speak of; which hath been made to be of two sorts, primitive and by influxion. Primitive is grounded upon the supposition that the mind, when it is withdrawn and collected into itself, and not diffused into the organs of the body, hath some extent and latitude of prenotion; which therefore appeareth most in sleep, in ecstasies, and near death, and more rarely in waking apprehensions; and is induced and furthered by those abstinences and observances which make the mind most to consist in

itself. By influxion, is grounded upon the conceit that the mind, as a mirror or glass, should take illumination from the foreknowledge of God and spirits: unto which the same regiment doth likewise conduce. For the retiring of the mind within itself is the state which is most susceptible of divine influxions; save that it is accompanied in this case with a fervency and elevation (which the ancients noted by fury), and not with a repose and quiet, as it is in the other.

(3) Fascination is the power and act of imagination intensive upon other bodies than the body of the imaginant, for of that we spake in the proper place. Wherein the school of Paracelsus, and the disciples of pretended natural magic, have been so intemperate, as they have exalted the power of the imagination to be much one with the power of miracle-working faith. Others, that draw nearer to probability, calling to their view the secret passages of things, and specially of the contagion that passeth from body to body, do conceive it should likewise be agreeable to nature that there should be some transmissions and operations from spirit to spirit without the mediation of the senses; whence the conceits have grown (now almost made civil) of the mastering spirit, and the force of confidence, and the like. Incident unto this is the inquiry how to raise and fortify the imagination; for if the imagination fortified have power, then it is material to know how to fortify and exalt it. And herein comes in crookedly and dangerously a palliation of a great part of ceremonial magic. For it may be pretended that ceremonies, characters, and charms do work, not by any tacit or sacramental contract with evil spirits, but serve only to strengthen the imagination of him that useth it; as images are said by the Roman Church to fix the cogitations and raise the devotions of them that pray before them. But for mine own judgment, if it be admitted that imagination hath power, and that ceremonies fortify imagination, and that they be used sincerely and intentionally for that purpose; yet I should hold them unlawful, as opposing to that first edict which God gave unto man, *In sudore vultus comedes panem tuum*. For they propound those noble effects, which God hath set forth unto man to be bought at the price of labour, to be attained by a few easy and slothful observances. Deficiences in these knowledges I will report none, other than the general

deficience, that it is not known how much of them is verity, and how much vanity.

XII. (1) The knowledge which respecteth the faculties of the mind of man is of two kinds — the one respecting his understanding and reason, and the other his will, appetite, and affection; whereof the former produceth position or decree, the latter action or execution. It is true that the imagination is an agent or *nuncius* in both provinces, both the judicial and the ministerial. For sense sendeth over to imagination before reason have judged, and reason sendeth over to imagination before the decree can be acted. For imagination ever precedeth voluntary motion. Saving that this Janus of imagination hath differing faces: for the face towards reason hath the print of truth, but the face towards action hath the print of good; which nevertheless are faces,

"Quales decet esse sororum."

Neither is the imagination simply and only a messenger; but is invested with, or at least wise usurpeth no small authority in itself, besides the duty of the message. For it was well said by Aristotle, "That the mind hath over the body that commandment, which the lord hath over a bondman; but that reason hath over the imagination that commandment which a magistrate hath over a free citizen," who may come also to rule in his turn. For we see that, in matters of faith and religion, we raise our imagination above our reason, which is the cause why religion sought ever access to the mind by similitudes, types, parables, visions, dreams. And again, in all persuasions that are wrought by eloquence, and other impressions of like nature, which do paint and disguise the true appearance of things, the chief recommendation unto reason is from the imagination. Nevertheless, because I find not any science that doth properly or fitly pertain to the imagination, I see no cause to alter the former division. For as for poesy, it is rather a pleasure or play of imagination than a work or duty thereof. And if it be a work, we speak not now of such parts of learning as the imagination produceth, but of such sciences as handle and consider of the imagination. No more than we shall speak now of such knowledges as reason produceth (for that extendeth to all philosophy), but of such knowledges as do

handle and inquire of the faculty of reason: so as poesy had his true place. As for the power of the imagination in nature, and the manner of fortifying the same, we have mentioned it in the doctrine *De Anima*, whereunto most fitly it belongeth. And lastly, for imaginative or insinuative reason, which is the subject of rhetoric, we think it best to refer it to the arts of reason. So therefore we content ourselves with the former division, that human philosophy, which respecteth the faculties of the mind of man, hath two parts, rational and moral.

(2) The part of human philosophy which is rational is of all knowledges, to the most wits, the least delightful, and seemeth but a net of subtlety and spinosity. For as it was truly said, that knowledge is *pabulum animi*; so in the nature of men's appetite to this food most men are of the taste and stomach of the Israelites in the desert, that would fain have returned *ad ollas carnium*, and were weary of manna; which, though it were celestial, yet seemed less nutritive and comfortable. So generally men taste well knowledges that are drenched in flesh and blood, civil history, morality, policy, about the which men's affections, praises, fortunes do turn and are conversant. But this same *lumen siccum* doth parch and offend most men's watery and soft natures. But to speak truly of things as they are in worth, rational knowledges are the keys of all other arts, for as Aristotle saith aptly and elegantly, "That the hand is the instrument of instruments, and the mind is the form of forms;" so these be truly said to be the art of arts. Neither do they only direct, but likewise confirm and strengthen; even as the habit of shooting doth not only enable to shoot a nearer shoot, but also to draw a stronger bow.

(3) The arts intellectual are four in number, divided according to the ends whereunto they are referred — for man's labour is to invent that which is sought or propounded; or to judge that which is invented; or to retain that which is judged; or to deliver over that which is retained. So as the arts must be four — art of inquiry or invention; art of examination or judgment; art of custody or memory; and art of elocution or tradition.

XIII. (1) Invention is of two kinds much differing — the one of arts and sciences, and the other of speech and arguments. The former of these I do report

deficient; which seemeth to me to be such a deficience as if, in the making of an inventory touching the state of a defunct, it should be set down that there is no ready money. For as money will fetch all other commodities, so this knowledge is that which should purchase all the rest. And like as the West Indies had never been discovered if the use of the mariner's needle had not been first discovered, though the one be vast regions, and the other a small motion; so it cannot be found strange if sciences be no further discovered, if the art itself of invention and discovery hath been passed over.

(2) That this part of knowledge is wanting, to my judgment standeth plainly confessed; for first, logic doth not pretend to invent sciences, or the axioms of sciences, but passeth it over with a *cuique in sua arte credendum*. And Celsus acknowledgeth it gravely, speaking of the empirical and dogmatical sects of physicians, "That medicines and cures were first found out, and then after the reasons and causes were discoursed; and not the causes first found out, and by light from them the medicines and cures discovered." And Plato in his "Theætetus" noteth well, "That particulars are infinite, and the higher generalities give no sufficient direction; and that the pith of all sciences, which maketh the artsman differ from the inexpert, is in the middle propositions, which in every particular knowledge are taken from tradition and experience." And therefore we see, that they which discourse of the inventions and originals of things refer them rather to chance than to art, and rather to beasts, birds, fishes, serpents, than to men.

"Dictamnum genetrix Cretæa carpit ab Ida,
Puberibus caulem foliis et flore camantem
Purpureo; non illa feris incognita capris
Gramina, cum tergo volucres hæsere sagittæ."

So that it was no marvel (the manner of antiquity being to consecrate inventors) that the Egyptians had so few human idols in their temples, but almost all brute:

"Omnigenumque Deum monstra, et latrator Anubis,
Contra Neptunum, et Venerem, contraque Minervam, &c."

And if you like better the tradition of the Grecians, and ascribe the first inventions to men, yet you will rather believe that Prometheus first stroke the flints, and marvelled at the spark, than that when he first stroke the flints he expected the spark; and therefore we see the West Indian Prometheus had no intelligence with the European, because of the rareness with them of flint, that gave the first occasion. So as it should seem, that hitherto men are rather beholden to a wild goat for surgery, or to a nightingale for music, or to the ibis for some part of physic, or to the pot-lid that flew open for artillery, or generally to chance or anything else than to logic for the invention of arts and sciences. Neither is the form of invention which Virgil describeth much other:

"Ut varias usus meditande extunderet artes
Paulatim."

For if you observe the words well, it is no other method than that which brute beasts are capable of, and do put in ure; which is a perpetual intending or practising some one thing, urged and imposed by an absolute necessity of conservation of being. For so Cicero saith very truly, *Usus uni rei deditus et naturam et artem sæpe vincit*. And therefore if it be said of men,

"Labor omnia vincit
Improbus, et duris urgens in rebus egestas,"

it is likewise said of beasts, *Quis psittaco docuit suum χαιρε*? Who taught the raven in a drought to throw pebbles into a hollow tree, where she spied water, that the water might rise so as she might come to it? Who taught the bee to sail through such a vast sea or air, and to find the way from a field in a flower a great way off to her hive? Who taught the ant to bite every grain of corn that she burieth in her hill, lest it should take root and grow? Add then the word

extundere, which importeth the extreme difficulty, and the word *paulatim*, which importeth the extreme slowness, and we are where we were, even amongst the Egyptians' gods; there being little left to the faculty of reason, and nothing to the duty or art, for matter of invention.

(3) Secondly, the induction which the logicians speak of, and which seemeth familiar with Plato, whereby the principles of sciences may be pretended to be invented, and so the middle propositions by derivation from the principles; their form of induction, I say, is utterly vicious and incompetent; wherein their error is the fouler, because it is the duty of art to perfect and exalt nature; but they contrariwise have wronged, abused, and traduced nature. For he that shall attentively observe how the mind doth gather this excellent dew of knowledge, like unto that which the poet speaketh of, *Aërei mellis cælestia dona*, distilling and contriving it out of particulars natural and artificial, as the flowers of the field and garden, shall find that the mind of herself by nature doth manage and act an induction much better than they describe it. For to conclude upon an enumeration of particulars, without instance contradictory, is no conclusion, but a conjecture; for who can assure (in many subjects) upon those particulars which appear of a side, that there are not other on the contrary side which appear not? As if Samuel should have rested upon those sons of Jesse which were brought before him, and failed of David which was in the field. And this form (to say truth), is so gross, as it had not been possible for wits so subtle as have managed these things to have offered it to the world, but that they hasted to their theories and dogmaticals, and were imperious and scornful toward particulars; which their manner was to use but as *lictores* and *viatores*, for sergeants and whifflers, *ad summovendam turbam*, to make way and make room for their opinions, rather than in their true use and service. Certainly it is a thing may touch a man with a religious wonder, to see how the footsteps of seducement are the very same in divine and human truth; for, as in divine truth man cannot endure to become as a child, so in human, they reputed the attending the inductions (whereof we speak), as if it were a second infancy or childhood.

(4) Thirdly, allow some principles or axioms were rightly induced, yet, nevertheless, certain it is that middle propositions cannot be deduced from them in subject of nature by syllogism — that is, by touch and reduction of them to principles in a middle term. It is true that in sciences popular, as moralities, laws, and the like, yea, and divinity (because it pleaseth God to apply Himself to the capacity of the simplest), that form may have use; and in natural philosophy likewise, by way of argument or satisfactory reason, *Quæ assensum parit operis effæta est*; but the subtlety of nature and operations will not be enchained in those bonds. For arguments consist of propositions, and propositions of words, and words are but the current tokens or marks of popular notions of things; which notions, if they be grossly and variably collected out of particulars, it is not the laborious examination either of consequences of arguments, or of the truth of propositions, that can ever correct that error, being (as the physicians speak) in the first digestion. And, therefore, it was not without cause, that so many excellent philosophers became sceptics and academics, and denied any certainty of knowledge or comprehension; and held opinion that the knowledge of man extended only to appearances and probabilities. It is true that in Socrates it was supposed to be but a form of irony, *Scientiam dissimulando simulavit*; for he used to disable his knowledge, to the end to enhance his knowledge; like the humour of Tiberius in his beginnings, that would reign, but would not acknowledge so much. And in the later academy, which Cicero embraced, this opinion also of *acatalepsia* (I doubt) was not held sincerely; for that all those which excelled in copy of speech seem to have chosen that sect, as that which was fittest to give glory to their eloquence and variable discourses; being rather like progresses of pleasure than journeys to an end. But assuredly many scattered in both academies did hold it in subtlety and integrity. But here was their chief error: they charged the deceit upon the senses; which in my judgment (notwithstanding all their cavillations) are very sufficient to certify and report truth, though not always immediately, yet by comparison, by help of instrument, and by producing and urging such things as are too subtle for the sense to some effect comprehensible by the sense, and other like assistance. But they ought to

have charged the deceit upon the weakness of the intellectual powers, and upon the manner of collecting and concluding upon the reports of the senses. This I speak, not to disable the mind of man, but to stir it up to seek help; for no man, be he never so cunning or practised, can make a straight line or perfect circle by steadiness of hand, which may be easily done by help of a ruler or compass.

(5) This part of invention, concerning the invention of sciences, I purpose (if God give me leave) hereafter to propound, having digested it into two parts: whereof the one I term *experientia literata*, and the other *interpretatio naturæ*; the former being but a degree and rudiment of the latter. But I will not dwell too long, nor speak too great upon a promise.

(6) The invention of speech or argument is not properly an invention; for to invent is to discover that we know not, and not to recover or resummon that which we already know; and the use of this invention is no other but, out of the knowledge whereof our mind is already possessed to draw forth or call before us that which may be pertinent to the purpose which we take into our consideration. So as to speak truly, it is no invention, but a remembrance or suggestion, with an application; which is the cause why the schools do place it after judgment, as subsequent and not precedent. Nevertheless, because we do account it a chase as well of deer in an enclosed park as in a forest at large, and that it hath already obtained the name, let it be called invention; so as it be perceived and discerned, that the scope and end of this invention is readiness and present use of our knowledge, and not addition or amplification thereof.

(7) To procure this ready use of knowledge there are two courses, preparation and suggestion. The former of these seemeth scarcely a part of knowledge, consisting rather of diligence than of any artificial erudition. And herein Aristotle wittily, but hurtfully, doth deride the sophists near his time, saying, "They did as if one that professed the art of shoemaking should not teach how to make up a shoe, but only exhibit in a readiness a number of shoes of all fashions and sizes." But yet a man might reply, that if a shoemaker should have no shoes in his shop, but only work as he is bespoken, he should be weakly customed. But our Saviour, speaking of divine knowledge, saith, "That the kingdom of

heaven is like a good householder, that bringeth forth both new and old store;" and we see the ancient writers of rhetoric do give it in precept, that pleaders should have the places, whereof they have most continual use, ready handled in all the variety that may be; as that, to speak for the literal interpretation of the law against equity, and contrary; and to speak for presumptions and inferences against testimony, and contrary. And Cicero himself, being broken unto it by great experience, delivereth it plainly, that whatsoever a man shall have occasion to speak of (if he will take the pains), he may have it in effect premeditate and handled *in thesi*. So that when he cometh to a particular he shall have nothing to do, but to put to names, and times, and places, and such other circumstances of individuals. We see likewise the exact diligence of Demosthenes; who, in regard of the great force that the entrance and access into causes hath to make a good impression, had ready framed a number of prefaces for orations and speeches. All which authorities and precedents may overweigh Aristotle's opinion, that would have us change a rich wardrobe for a pair of shears.

(8) But the nature of the collection of this provision or preparatory store, though it be common both to logic and rhetoric, yet having made an entry of it here, where it came first to be spoken of, I think fit to refer over the further handling of it to rhetoric.

(9) The other part of invention, which I term suggestion, doth assign and direct us to certain marks, or places, which may excite our mind to return and produce such knowledge as it hath formerly collected, to the end we may make use thereof. Neither is this use (truly taken) only to furnish argument to dispute, probably with others, but likewise to minister unto our judgment to conclude aright within ourselves. Neither may these places serve only to apprompt our invention, but also to direct our inquiry. For a faculty of wise interrogating is half a knowledge. For as Plato saith, "Whosoever seeketh, knoweth that which he seeketh for in a general notion; else how shall he know it when he hath found it?" And, therefore, the larger your anticipation is, the more direct and compendious is your search. But the same places which will help us what to produce of that which we know already, will also help us, if a man of experience

were before us, what questions to ask; or, if we have books and authors to instruct us, what points to search and revolve; so as I cannot report that this part of invention, which is that which the schools call topics, is deficient.

(10) Nevertheless, topics are of two sorts, general and special. The general we have spoken to; but the particular hath been touched by some, but rejected generally as inartificial and variable. But leaving the humour which hath reigned too much in the schools (which is, to be vainly subtle in a few things which are within their command, and to reject the rest), I do receive particular topics; that is, places or directions of invention and inquiry in every particular knowledge, as things of great use, being mixtures of logic with the matter of sciences. For in these it holdeth *ars inveniendi adolescit cum inventis*; for as in going of a way, we do not only gain that part of the way which is passed, but we gain the better sight of that part of the way which remaineth, so every degree of proceeding in a science giveth a light to that which followeth; which light, if we strengthen by drawing it forth into questions or places of inquiry, we do greatly advance our pursuit.

XIV. (1) Now we pass unto the arts of judgment, which handle the natures of proofs and demonstrations, which as to induction hath a coincidence with invention; for all inductions, whether in good or vicious form, the same action of the mind which inventeth, judgeth — all one as in the sense. But otherwise it is in proof by syllogism, for the proof being not immediate, but by mean, the invention of the mean is one thing, and the judgment of the consequence is another; the one exciting only, the other examining. Therefore, for the real and exact form of judgment, we refer ourselves to that which we have spoken of interpretation of Nature.

(2) For the other judgment by syllogism, as it is a thing most agreeable to the mind of man, so it hath been vehemently end excellently laboured. For the nature of man doth extremely covet to have somewhat in his understanding fixed and unmovable, and as a rest and support of the mind. And, therefore, as Aristotle endeavoureth to prove, that in all motion there is some point quiescent; and as he elegantly expoundeth the ancient fable of Atlas (that stood fixed, and

bare up the heaven from falling) to be meant of the poles or axle-tree of heaven, whereupon the conversion is accomplished, so assuredly men have a desire to have an Atlas or axle-tree within to keep them from fluctuation, which is like to a perpetual peril of falling. Therefore men did hasten to set down some principles about which the variety of their disputatious might turn.

(3) So, then, this art of judgment is but the reduction of propositions to principles in a middle term. The principles to be agreed by all and exempted from argument; the middle term to be elected at the liberty of every man's invention; the reduction to be of two kinds, direct and inverted: the one when the proposition is reduced to the principle, which they term a probation ostensive; the other, when the contradictory of the proposition is reduced to the contradictory of the principle, which is that which they call *per incommodum*, or pressing an absurdity; the number of middle terms to be as the proposition standeth degrees more or less removed from the principle.

(4) But this art hath two several methods of doctrine, the one by way of direction, the other by way of caution: the former frameth and setteth down a true form of consequence, by the variations and deflections from which errors and inconsequences may be exactly judged. Toward the composition and structure of which form it is incident to handle the parts thereof, which are propositions, and the parts of propositions, which are simple words. And this is that part of logic which is comprehended in the Analytics.

(5) The second method of doctrine was introduced for expedite use and assurance sake, discovering the more subtle forms of sophisms and illaqueations with their redargutions, which is that which is termed *elenches*. For although in the more gross sorts of fallacies it happeneth (as Seneca maketh the comparison well) as in juggling feats, which, though we know not how they are done, yet we know well it is not as it seemeth to be; yet the more subtle sort of them doth not only put a man besides his answer, but doth many times abuse his judgment.

(6) This part concerning *elenches* is excellently handled by Aristotle in precept, but more excellently by Plato in example; not only in the persons of the sophists, but even in Socrates himself, who, professing to affirm nothing, but to

infirm that which was affirmed by another, hath exactly expressed all the forms of objection, fallace, and redargution. And although we have said that the use of this doctrine is for redargution, yet it is manifest the degenerate and corrupt use is for caption and contradiction, which passeth for a great faculty, and no doubt is of very great advantage, though the difference be good which was made between orators and sophisters, that the one is as the greyhound, which hath his advantage in the race, and the other as the hare, which hath her advantage in the turn, so as it is the advantage of the weaker creature.

(7) But yet further, this doctrine of elenches hath a more ample latitude and extent than is perceived; namely, unto divers parts of knowledge, whereof some are laboured and other omitted. For first, I conceive (though it may seem at first somewhat strange) that that part which is variably referred, sometimes to logic, sometimes to metaphysic, touching the common adjuncts of essences, is but an *elenche*; for the great sophism of all sophisms being equivocation or ambiguity of words and phrase, specially of such words as are most general and intervene in every inquiry, it seemeth to me that the true and fruitful use (leaving vain subtleties and speculations) of the inquiry of majority, minority, priority, posteriority, identity, diversity, possibility, act, totality, parts, existence, privation, and the like, are but wise cautions against ambiguities of speech. So, again, the distribution of things into certain tribes, which we call categories or predicaments, are but cautions against the confusion of definitions and divisions.

(8) Secondly, there is a seducement that worketh by the strength of the impression, and not by the subtlety of the illaqueation — not so much perplexing the reason, as overruling it by power of the imagination. But this part I think more proper to handle when I shall speak of rhetoric.

(9) But lastly, there is yet a much more important and profound kind of fallacies in the mind of man, which I find not observed or inquired at all, and think good to place here, as that which of all others appertaineth most to rectify judgment, the force whereof is such as it doth not dazzle or snare the understanding in some particulars, but doth more generally and inwardly infect and corrupt the state thereof. For the mind of man is far from the nature of a

clear and equal glass, wherein the beams of things should reflect according to their true incidence; nay, it is rather like an enchanted glass, full of superstition and imposture, if it be not delivered and reduced. For this purpose, let us consider the false appearances that are imposed upon us by the general nature of the mind, beholding them in an example or two; as first, in that instance which is the root of all superstition, namely, that to the nature of the mind of all men it is consonant for the affirmative or active to affect more than the negative or privative. So that a few times hitting or presence countervails ofttimes failing or absence, as was well answered by Diagoras to him that showed him in Neptune's temple the great number of pictures of such as had escaped shipwreck, and had paid their vows to Neptune, saying, "Advise now, you that think it folly to invocate Neptune in tempest." "Yea, but," saith Diagoras, "where are they painted that are drowned?" Let us behold it in another instance, namely, that the spirit of man, being of an equal and uniform substance, doth usually suppose and feign in nature a greater equality and uniformity than is in truth. Hence it cometh that the mathematicians cannot satisfy themselves except they reduce the motions of the celestial bodies to perfect circles, rejecting spiral lines, and labouring to be discharged of eccentrics. Hence it cometh that whereas there are many things in Nature as it were *monodica*, *sui juris*, yet the cogitations of man do feign unto them relatives, parallels, and conjugates, whereas no such thing is; as they have feigned an element of fire to keep square with earth, water, and air, and the like. Nay, it is not credible, till it be opened, what a number of fictions and fantasies the similitude of human actions and arts, together with the making of man *communis mensura*, have brought into natural philosophy; not much better than the heresy of the Anthropomorphites, bred in the cells of gross and solitary monks, and the opinion of Epicurus, answerable to the same in heathenism, who supposed the gods to be of human shape. And, therefore, Velleius the Epicurean needed not to have asked why God should have adorned the heavens with stars, as if He had been an *ædilis*, one that should have set forth some magnificent shows or plays. For if that great Work-master had been of a human disposition, He would have cast the stars into some pleasant and beautiful

works and orders like the frets in the roofs of houses; whereas one can scarce find a posture in square, or triangle, or straight line, amongst such an infinite number, so differing a harmony there is between the spirit of man and the spirit of Nature.

(10) Let us consider again the false appearances imposed upon us by every man's own individual nature and custom in that feigned supposition that Plato maketh of the cave; for certainly if a child were continued in a grot or cave under the earth until maturity of age, and came suddenly abroad, he would have strange and absurd imaginations. So, in like manner, although our persons live in the view of heaven, yet our spirits are included in the caves of our own complexions and customs, which minister unto us infinite errors and vain opinions if they be not recalled to examination. But hereof we have given many examples in one of the errors, or peccant humours, which we ran briefly over in our first book.

(11) And lastly, let us consider the false appearances that are imposed upon us by words, which are framed and applied according to the conceit and capacities of the vulgar sort; and although we think we govern our words, and prescribe it well *loquendum ut vulgus sentiendum ut sapientes*, yet certain it is that words, as a Tartar's bow, do shoot back upon the understanding of the wisest, and mightily entangle and pervert the judgment. So as it is almost necessary in all controversies and disputations to imitate the wisdom of the mathematicians, in setting down in the very beginning the definitions of our words and terms, that others may know how we accept and understand them, and whether they concur with us or no. For it cometh to pass, for want of this, that we are sure to end there where we ought to have begun, which is, in questions and differences about words. To conclude, therefore, it must be confessed that it is not possible to divorce ourselves from these fallacies and false appearances because they are inseparable from our nature and condition of life; so yet, nevertheless, the caution of them (for all elenches, as was said, are but cautions) doth extremely import the true conduct of human judgment. The particular

elenches or cautions against these three false appearances I find altogether deficient.

(12) There remaineth one part of judgment of great excellency which to mine understanding is so slightly touched, as I may report that also deficient; which is the application of the differing kinds of proofs to the differing kinds of subjects. For there being but four kinds of demonstrations, that is, by the immediate consent of the mind or sense, by induction, by syllogism, and by congruity, which is that which Aristotle calleth demonstration in orb or circle, and not *a notioribus*, every of these hath certain subjects in the matter of sciences, in which respectively they have chiefest use; and certain others, from which respectively they ought to be excluded; and the rigour and curiosity in requiring the more severe proofs in some things, and chiefly the facility in contenting ourselves with the more remiss proofs in others, hath been amongst the greatest causes of detriment and hindrance to knowledge. The distributions and assignations of demonstrations according to the analogy of sciences I note as deficient.

XV. (1) The custody or retaining of knowledge is either in writing or memory; whereof writing hath two parts, the nature of the character and the order of the entry. For the art of characters, or other visible notes of words or things, it hath nearest conjugation with grammar, and, therefore, I refer it to the due place; for the disposition and collocation of that knowledge which we preserve in writing, it consisteth in a good digest of common-places, wherein I am not ignorant of the prejudice imputed to the use of common-place books, as causing a retardation of reading, and some sloth or relaxation of memory. But because it is but a counterfeit thing in knowledges to be forward and pregnant, except a man be deep and full, I hold the entry of common-places to be a matter of great use and essence in studying, as that which assureth copy of invention, and contracteth judgment to a strength. But this is true, that of the methods of common-places that I have seen, there is none of any sufficient worth, all of them carrying merely the face of a school and not of a world; and referring to vulgar matters and pedantical divisions, without all life or respect to action.

(2) For the other principal part of the custody of knowledge, which is memory, I find that faculty in my judgment weakly inquired of. An art there is extant of it; but it seemeth to me that there are better precepts than that art, and better practices of that art than those received. It is certain the art (as it is) may be raised to points of ostentation prodigious; but in use (as is now managed) it is barren, not burdensome, nor dangerous to natural memory, as is imagined, but barren, that is, not dexterous to be applied to the serious use of business and occasions. And, therefore, I make no more estimation of repeating a great number of names or words upon once hearing, or the pouring forth of a number of verses or rhymes *extempore*, or the making of a satirical simile of everything, or the turning of everything to a jest, or the falsifying or contradicting of everything by cavil, or the like (whereof in the faculties of the mind there is great copy, and such as by device and practice may be exalted to an extreme degree of wonder), than I do of the tricks of tumblers, funambuloes, baladines; the one being the same in the mind that the other is in the body, matters of strangeness without worthiness.

(3) This art of memory is but built upon two intentions; the one prenotion, the other emblem. Prenotion dischargeth the indefinite seeking of that we would remember, and directeth us to seek in a narrow compass, that is, somewhat that hath congruity with our place of memory. Emblem reduceth conceits intellectual to images sensible, which strike the memory more; out of which axioms may be drawn much better practice than that in use; and besides which axioms, there are divers more touching help of memory not inferior to them. But I did in the beginning distinguish, not to report those things deficient, which are but only ill managed.

XVI. (1) There remaineth the fourth kind of rational knowledge, which is transitive, concerning the expressing or transferring our knowledge to others, which I will term by the general name of tradition or delivery. Tradition hath three parts: the first concerning the organ of tradition; the second concerning the method of tradition; and the third concerning the illustration of tradition.

(2) For the organ of tradition, it is either speech or writing; for Aristotle saith well, "Words are the images of cogitations, and letters are the images of words." But yet it is not of necessity that cogitations be expressed by the medium of words. For whatsoever is capable of sufficient differences, and those perceptible by the sense, is in nature competent to express cogitations. And, therefore, we see in the commerce of barbarous people that understand not one another's language, and in the practice of divers that are dumb and deaf, that men's minds are expressed in gestures, though not exactly, yet to serve the turn. And we understand further, that it is the use of China and the kingdoms of the High Levant to write in characters real, which express neither letters nor words in gross, but things or notions; insomuch as countries and provinces which understand not one another's language can nevertheless read one another's writings, because the characters are accepted more generally than the languages do extend; and, therefore, they have a vast multitude of characters, as many, I suppose, as radical words.

(3) These notes of cogitations are of two sorts: the one when the note hath some similitude or congruity with the notion; the other *ad placitum*, having force only by contract or acceptation. Of the former sort are hieroglyphics and gestures. For as to hieroglyphics (things of ancient use and embraced chiefly by the Egyptians, one of the most ancient nations), they are but as continued impresses and emblems. And as for gestures, they are as transitory hieroglyphics, and are to hieroglyphics as words spoken are to words written, in that they abide not; but they have evermore, as well as the other, an affinity with the things signified. As Periander, being consulted with how to preserve a tyranny newly usurped, bid the messenger attend and report what he saw him do; and went into his garden and topped all the highest flowers, signifying that it consisted in the cutting off and keeping low of the nobility and grandees. *Ad placitum*, are the characters real before mentioned, and words: although some have been willing by curious inquiry, or rather by apt feigning, to have derived imposition of names from reason and intendment; a speculation elegant, and, by reason it searcheth into antiquity, reverent, but sparingly mixed with truth, and

of small fruit. This portion of knowledge touching the notes of things and cogitations in general, I find not inquired, but deficient. And although it may seem of no great use, considering that words and writings by letters do far excel all the other ways; yet because this part concerneth, as it were, the mint of knowledge (for words are the tokens current and accepted for conceits, as moneys are for values, and that it is fit men be not ignorant that moneys may be of another kind than gold and silver), I thought good to propound it to better inquiry.

(4) Concerning speech and words, the consideration of them hath produced the science of grammar. For man still striveth to reintegrate himself in those benedictions, from which by his fault he hath been deprived; and as he hath striven against the first general curse by the invention of all other arts, so hath he sought to come forth of the second general curse (which was the confusion of tongues) by the art of grammar; whereof the use in a mother tongue is small, in a foreign tongue more; but most in such foreign tongues as have ceased to be vulgar tongues, and are turned only to learned tongues. The duty of it is of two natures: the one popular, which is for the speedy and perfect attaining languages, as well for intercourse of speech as for understanding of authors; the other philosophical, examining the power and nature of words, as they are the footsteps and prints of reason: which kind of analogy between words and reason is handled *sparsim*, brokenly though not entirely; and, therefore, I cannot report it deficient, though I think it very worthy to be reduced into a science by itself.

(5) Unto grammar also belongeth, as an appendix, the consideration of the accidents of words; which are measure, sound, and elevation or accent, and the sweetness and harshness of them: whence hath issued some curious observations in rhetoric, but chiefly poesy, as we consider it, in respect of the verse and not of the argument. Wherein though men in learned tongues do tie themselves to the ancient measures, yet in modern languages it seemeth to me as free to make new measures of verses as of dances; for a dance is a measured pace, as a verse is a measured speech. In these things this sense is better judge than the art:

"Cœnæ fercula nostræ
Mallem convivis quam placuisse cocis."

And of the servile expressing antiquity in an unlike and an unfit subject, it is well said, "*Quod tempore antiquum videtur*, *id incongruitate est maxime novum*."

(6) For ciphers, they are commonly in letters or alphabets, but may be in words. The kinds of ciphers (besides the simple ciphers, with changes, and intermixtures of nulls and non-significants) are many, according to the nature or rule of the infolding, wheel-ciphers, key-ciphers, doubles, &c. But the virtues of them, whereby they are to be preferred, are three; that they be not laborious to write and read; that they be impossible to decipher; and, in some cases, that they be without suspicion. The highest degree whereof is to write *omnia per omnia*; which is undoubtedly possible, with a proportion quintuple at most of the writing infolding to the writing infolded, and no other restraint whatsoever. This art of ciphering hath for relative an art of deciphering, by supposition unprofitable, but, as things are, of great use. For suppose that ciphers were well managed, there be multitudes of them which exclude the decipherer. But in regard of the rawness and unskilfulness of the hands through which they pass, the greatest matters are many times carried in the weakest ciphers.

(7) In the enumeration of these private and retired arts it may be thought I seek to make a great muster-roll of sciences, naming them for show and ostentation, and to little other purpose. But let those, which are skilful in them, judge whether I bring them in only for appearance, or whether in that which I speak of them (though in few words) there be not some seed of proficience. And this must be remembered, that as there be many of great account in their countries and provinces, which, when they come up to the seat of the estate, are but of mean rank and scarcely regarded; so these arts, being here placed with the principal and supreme sciences, seem petty things: yet to such as have chosen them to spend their labours and studies in them, they seem great matters.

XVII. (1) For the method of tradition, I see it hath moved a controversy in our time. But as in civil business, if there be a meeting, and men fall at words, there is commonly an end of the matter for that time, and no proceeding at all; so in learning, where there is much controversy, there is many times little inquiry. For this part of knowledge of method seemeth to me so weakly inquired as I shall report it deficient.

(2) Method hath been placed, and that not amiss, in logic, as a part of judgment. For as the doctrine of syllogisms comprehendeth the rules of judgment upon that which is invented, so the doctrine of method containeth the rules of judgment upon that which is to be delivered; for judgment precedeth delivery, as it followeth invention. Neither is the method or the nature of the tradition material only to the use of knowledge, but likewise to the progression of knowledge: for since the labour and life of one man cannot attain to perfection of knowledge, the wisdom of the tradition is that which inspireth the felicity of continuance and proceeding. And therefore the most real diversity of method is of method referred to use, and method referred to progression: whereof the one may be termed magistral, and the other of probation.

(3) The latter whereof seemeth to be *via deserta et interclusa*. For as knowledges are now delivered, there is a kind of contract of error between the deliverer and the receiver. For he that delivereth knowledge desireth to deliver it in such form as may be best believed, and not as may be best examined; and he that receiveth knowledge desireth rather present satisfaction than expectant inquiry; and so rather not to doubt, than not to err: glory making the author not to lay open his weakness, and sloth making the disciple not to know his strength.

(4) But knowledge that is delivered as a thread to be spun on ought to be delivered and intimated, if it were possible, in the same method wherein it was invented: and so is it possible of knowledge induced. But in this same anticipated and prevented knowledge, no man knoweth how he came to the knowledge which he hath obtained. But yet, nevertheless, *secundum majus et minus*, a man may revisit and descend unto the foundations of his knowledge and consent; and so transplant it into another, as it grew in his own mind. For it is in

knowledges as it is in plants: if you mean to use the plant, it is no matter for the roots — but if you mean to remove it to grow, then it is more assured to rest upon roots than slips: so the delivery of knowledges (as it is now used) is as of fair bodies of trees without the roots; good for the carpenter, but not for the planter. But if you will have sciences grow, it is less matter for the shaft or body of the tree, so you look well to the taking up of the roots. Of which kind of delivery the method of the mathematics, in that subject, hath some shadow: but generally I see it neither put in use nor put in inquisition, and therefore note it for deficient.

(5) Another diversity of method there is, which hath some affinity with the former, used in some cases by the discretion of the ancients, but disgraced since by the impostures of many vain persons, who have made it as a false light for their counterfeit merchandises; and that is enigmatical and disclosed. The pretence whereof is, to remove the vulgar capacities from being admitted to the secrets of knowledges, and to reserve them to selected auditors, or wits of such sharpness as can pierce the veil.

(6) Another diversity of method, whereof the consequence is great, is the delivery of knowledge in aphorisms, or in methods; wherein we may observe that it hath been too much taken into custom, out of a few axioms or observations upon any subject, to make a solemn and formal art, filling it with some discourses, and illustrating it with examples, and digesting it into a sensible method. But the writing in aphorisms hath many excellent virtues, whereto the writing in method doth not approach.

(7) For first, it trieth the writer, whether he be superficial or solid: for aphorisms, except they should be ridiculous, cannot be made but of the pith and heart of sciences; for discourse of illustration is cut off; recitals of examples are cut off; discourse of connection and order is cut off; descriptions of practice are cut off. So there remaineth nothing to fill the aphorisms but some good quantity of observation; and therefore no man can suffice, nor in reason will attempt, to write aphorisms, but he that is sound and grounded. But in methods,

"Tantum series juncturaque pollet,
Tantum de medio sumptis accedit honoris,"

as a man shall make a great show of an art, which, if it were disjointed, would come to little. Secondly, methods are more fit to win consent or belief, but less fit to point to action; for they carry a kind of demonstration in orb or circle, one part illuminating another, and therefore satisfy. But particulars being dispersed do best agree with dispersed directions. And lastly, aphorisms, representing a knowledge broken, do invite men to inquire further; whereas methods, carrying the show of a total, do secure men, as if they were at furthest.

(8) Another diversity of method, which is likewise of great weight, is the handling of knowledge by assertions and their proofs, or by questions and their determinations. The latter kind whereof, if it be immoderately followed, is as prejudicial to the proceeding of learning as it is to the proceeding of an army to go about to besiege every little fort or hold. For if the field be kept, and the sum of the enterprise pursued, those smaller things will come in of themselves: indeed a man would not leave some important piece enemy at his back. In like manner, the use of confutation in the delivery of sciences ought to be very sparing; and to serve to remove strong preoccupations and prejudgments, and not to minister and excite disputatious and doubts.

(9) Another diversity of method is, according to the subject or matter which is handled. For there is a great difference in delivery of the mathematics, which are the most abstracted of knowledges, and policy, which is the most immersed. And howsoever contention hath been moved, touching a uniformity of method in multiformity of matter, yet we see how that opinion, besides the weakness of it, hath been of ill desert towards learning, as that which taketh the way to reduce learning to certain empty and barren generalities; being but the very husks and shells of sciences, all the kernel being forced out and expulsed with the torture and press of the method. And, therefore, as I did allow well of particular topics for invention, so I do allow likewise of particular methods of tradition.

(10) Another diversity of judgment in the delivery and teaching of knowledge is, according unto the light and presuppositions of that which is delivered. For that knowledge which is new, and foreign from opinions received, is to be delivered in another form than that that is agreeable and familiar; and therefore Aristotle, when he thinks to tax Democritus, doth in truth commend him, where he saith "If we shall indeed dispute, and not follow after similitudes," &c. For those whose conceits are seated in popular opinions need only but to prove or dispute; but those whose conceits are beyond popular opinions, have a double labour; the one to make themselves conceived, and the other to prove and demonstrate. So that it is of necessity with them to have recourse to similitudes and translations to express themselves. And therefore in the infancy of learning, and in rude times when those conceits which are now trivial were then new, the world was full of parables and similitudes; for else would men either have passed over without mark, or else rejected for paradoxes that which was offered, before they had understood or judged. So in divine learning, we see how frequent parables and tropes are, for it is a rule, that whatsoever science is not consonant to presuppositions must pray in aid of similitudes.

(11) There be also other diversities of methods vulgar and received: as that of resolution or analysis, of constitution or systasis, of concealment or cryptic, &c., which I do allow well of, though I have stood upon those which are least handled and observed. All which I have remembered to this purpose, because I would erect and constitute one general inquiry (which seems to me deficient) touching the wisdom of tradition.

(12) But unto this part of knowledge, concerning method, doth further belong not only the architecture of the whole frame of a work, but also the several beams and columns thereof; not as to their stuff, but as to their quantity and figure. And therefore method considereth not only the disposition of the argument or subject, but likewise the propositions: not as to their truth or matter, but as to their limitation and manner. For herein Ramus merited better a great deal in reviving the good rules of propositions — Καθολον πρωτον, κυτα παντος &c. — than he did in introducing the canker of epitomes; and yet (as it is the

condition of human things that, according to the ancient fables, "the most precious things have the most pernicious keepers") it was so, that the attempt of the one made him fall upon the other. For he had need be well conducted that should design to make axioms convertible, if he make them not withal circular, and non-promovent, or incurring into themselves; but yet the intention was excellent.

(13) The other considerations of method, concerning propositions, are chiefly touching the utmost propositions, which limit the dimensions of sciences: for every knowledge may be fitly said, besides the profundity (which is the truth and substance of it, that makes it solid), to have a longitude and a latitude; accounting the latitude towards other sciences, and the longitude towards action; that is, from the greatest generality to the most particular precept. The one giveth rule how far one knowledge ought to intermeddle within the province of another, which is the rule they call Καθαυτο; the other giveth rule unto what degree of particularity a knowledge should descend: which latter I find passed over in silence, being in my judgment the more material. For certainty there must be somewhat left to practice; but how much is worthy the inquiry? We see remote and superficial generalities do but offer knowledge to scorn of practical men; and are no more aiding to practice than an Ortelius' universal map is to direct the way between London and York. The better sort of rules have been not unfitly compared to glasses of steel unpolished, where you may see the images of things, but first they must be filed: so the rules will help if they be laboured and polished by practice. But how crystalline they may be made at the first, and how far forth they may be polished aforehand, is the question, the inquiry whereof seemeth to me deficient.

(14) There hath been also laboured and put in practice a method, which is not a lawful method, but a method of imposture: which is, to deliver knowledges in such manner as men may speedily come to make a show of learning, who have it not. Such was the travail of Raymundus Lullius in making that art which bears his name; not unlike to some books of typocosmy, which have been made since; being nothing but a mass of words of all arts, to give men countenance, that

those which use the terms might be thought to understand the art; which collections are much like a fripper's or broker's shop, that hath ends of everything, but nothing of worth.

XVIII. (1) Now we descend to that part which concerneth the illustration of tradition, comprehended in that science which we call rhetoric, or art of eloquence, a science excellent, and excellently well laboured. For although in true value it is inferior to wisdom (as it is said by God to Moses, when he disabled himself for want of this faculty, "Aaron shall be thy speaker, and thou shalt be to him as God"), yet with people it is the more mighty; for so Solomon saith, *Sapiens corde appellabitur prudens*, *sed dulcis eloquio majora reperiet*, signifying that profoundness of wisdom will help a man to a name or admiration, but that it is eloquence that prevaileth in an active life. And as to the labouring of it, the emulation of Aristotle with the rhetoricians of his time, and the experience of Cicero, hath made them in their works of rhetoric exceed themselves. Again, the excellency of examples of eloquence in the orations of Demosthenes and Cicero, added to the perfection of the precepts of eloquence, hath doubled the progression in this art; and therefore the deficiences which I shall note will rather be in some collections, which may as handmaids attend the art, than in the rules or use of the art itself.

(2) Notwithstanding, to stir the earth a little about the roots of this science, as we have done of the rest, the duty and office of rhetoric is to apply reason to imagination for the better moving of the will. For we see reason is disturbed in the administration thereof by three means — by illaqueation or sophism, which pertains to logic; by imagination or impression, which pertains to rhetoric; and by passion or affection, which pertains to morality. And as in negotiation with others, men are wrought by cunning, by importunity, and by vehemency; so in this negotiation within ourselves, men are undermined by inconsequences, solicited and importuned by impressions or observations, and transported by passions. Neither is the nature of man so unfortunately built, as that those powers and arts should have force to disturb reason, and not to establish and advance it. For the end of logic is to teach a form of argument to secure reason,

and not to entrap it; the end of morality is to procure the affections to obey reason, and not to invade it; the end of rhetoric is to fill the imagination to second reason, and not to oppress it; for these abuses of arts come in but *ex oblique*, for caution.

(3) And therefore it was great injustice in Plato, though springing out of a just hatred to the rhetoricians of his time, to esteem of rhetoric but as a voluptuary art, resembling it to cookery, that did mar wholesome meats, and help unwholesome by variety of sauces to the pleasure of the taste. For we see that speech is much more conversant in adorning that which is good than in colouring that which is evil; for there is no man but speaketh more honestly than he can do or think; and it was excellently noted by Thucydides, in Cleon, that because he used to hold on the bad side in causes of estate, therefore he was ever inveighing against eloquence and good speech, knowing that no man can speak fair of courses sordid and base. And therefore, as Plato said elegantly, "That virtue, if she could be seen, would move great love and affection;" so seeing that she cannot be showed to the sense by corporal shape, the next degree is to show her to the imagination in lively representation; for to show her to reason only in subtlety of argument was a thing ever derided in Chrysippus and many of the Stoics, who thought to thrust virtue upon men by sharp disputations and conclusions, which have no sympathy with the will of man.

(4) Again, if the affections in themselves were pliant and obedient to reason, it were true there should be no great use of persuasions and insinuations to the will, more than of naked proposition and proofs; but in regard of the continual mutinies and seditious of the affections —

"Video meliora, proboque,
Deteriora sequor,"

reason would become captive and servile, if eloquence of persuasions did not practise and win the imagination from the affections' part, and contract a confederacy between the reason and imagination against the affections; for the

affections themselves carry ever an appetite to good, as reason doth. The difference is, that the affection beholdeth merely the present; reason beholdeth the future and sum of time. And, therefore, the present filling the imagination more, reason is commonly vanquished; but after that force of eloquence and persuasion hath made things future and remote appear as present, then upon the revolt of the imagination reason prevaileth.

(5) We conclude, therefore, that rhetoric can be no more charged with the colouring of the worst part, than logic with sophistry, or morality with vice; for we know the doctrines of contraries are the same, though the use be opposite. It appeareth also that logic differeth from rhetoric, not only as the fist from the palm — the one close, the other at large — but much more in this, that logic handleth reason exact and in truth, and rhetoric handleth it as it is planted in popular opinions and manners. And therefore Aristotle doth wisely place rhetoric as between logic on the one side, and moral or civil knowledge on the other, as participating of both; for the proofs and demonstrations of logic are toward all men indifferent and the same, but the proofs and persuasions of rhetoric ought to differ according to the auditors:

"Orpheus in sylvis, inter delphinas Arion."

Which application in perfection of idea ought to extend so far that if a man should speak of the same thing to several persons, he should speak to them all respectively and several ways; though this politic part of eloquence in private speech it is easy for the greatest orators to want: whilst, by the observing their well-graced forms of speech, they leese the volubility of application; and therefore it shall not be amiss to recommend this to better inquiry, not being curious whether we place it here or in that part which concerneth policy.

(6) Now therefore will I descend to the deficiences, which, as I said, are but attendances; and first, I do not find the wisdom and diligence of Aristotle well pursued, who began to make a collection of the popular signs and colours of good and evil, both simple and comparative, which are as the sophisms of rhetoric (as I touched before). For example —

"Sophisma.

Quod laudatur, bonum: quod vituperatur, malum.

Redargutio.

Laudat venales qui vult extrudere merces."

Malum est, *malum est* (*inquit emptor*): *sed cum recesserit*, *tum gloriabitur*! The defects in the labour of Aristotle are three — one, that there be but a few of many; another, that there elenches are not annexed; and the third, that he conceived but a part of the use of them: for their use is not only in probation, but much more in impression. For many forms are equal in signification which are differing in impression, as the difference is great in the piercing of that which is sharp and that which is flat, though the strength of the percussion be the same. For there is no man but will be a little more raised by hearing it said, "Your enemies will be glad of this" —

"Hoc Ithacus velit, et magno mercentur Atridæ."

than by hearing it said only, "This is evil for you."

(7) Secondly, I do resume also that which I mentioned before, touching provision or preparatory store for the furniture of speech and readiness of invention, which appeareth to be of two sorts: the one in resemblance to a shop of pieces unmade up, the other to a shop of things ready made up; both to be applied to that which is frequent and most in request. The former of these I will call *antitheta*, and the latter *formulæ*.

(8) *Antitheta* are theses argued *pro et contra*, wherein men may be more large and laborious; but (in such as are able to do it) to avoid prolixity of entry, I wish the seeds of the several arguments to be cast up into some brief and acute sentences, not to be cited, but to be as skeins or bottoms of thread, to be unwinded at large when they come to be used; supplying authorities and examples by reference.

"*Pro verbis legis*.

Non est interpretatio, sed divinatio, quæ recedit a litera:

Cum receditur a litera, judex transit in legislatorem.

Pro sententia legis.
Ex omnibus verbis est eliciendus sensus qui interpretatur singula."

(9) *Formulæ* are but decent and apt passages or conveyances of speech, which may serve indifferently for differing subjects; as of preface, conclusion, digression, transition, excusation, &c. For as in buildings there is great pleasure and use in the well casting of the staircases, entries, doors, windows, and the like; so in speech, the conveyances and passages are of special ornament and effect.

"*A conclusion in a deliberative*.
So may we redeem the faults passed, and prevent the inconveniences future."

XIX. (1) There remain two appendices touching the tradition of knowledge, the one critical, the other pedantical. For all knowledge is either delivered by teachers, or attained by men's proper endeavours: and therefore as the principal part of tradition of knowledge concerneth chiefly writing of books, so the relative part thereof concerneth reading of books; whereunto appertain incidently these considerations. The first is concerning the true correction and edition of authors; wherein nevertheless rash diligence hath done great prejudice. For these critics have often presumed that that which they understand not is false set down: as the priest that, where he found it written of St. Paul *Demissus est per sportam*, mended his book, and made it *Demissus est per portam*; because *sporta* was a hard word, and out of his reading: and surely their errors, though they be not so palpable and ridiculous, yet are of the same kind. And therefore, as it hath been wisely noted, the most corrected copies are commonly the least correct.

The second is concerning the exposition and explication of authors, which resteth in annotations and commentaries: wherein it is over usual to blanch the obscure places and discourse upon the plain.

The third is concerning the times, which in many cases give great light to true interpretations.

The fourth is concerning some brief censure and judgment of the authors; that men thereby may make some election unto themselves what books to read.

And the fifth is concerning the syntax and disposition of studies; that men may know in what order or pursuit to read.

(2) For pedantical knowledge, it containeth that difference of tradition which is proper for youth; whereunto appertain divers considerations of great fruit.

As first, the timing and seasoning of knowledges; as with what to initiate them, and from what for a time to refrain them.

Secondly, the consideration where to begin with the easiest, and so proceed to the more difficult; and in what courses to press the more difficult, and then to turn them to the more easy; for it is one method to practise swimming with bladders, and another to practise dancing with heavy shoes.

A third is the application of learning according unto the propriety of the wits; for there is no defect in the faculties intellectual, but seemeth to have a proper cure contained in some studies: as, for example, if a child be bird-witted, that is, hath not the faculty of attention, the mathematics giveth a remedy thereunto; for in them, if the wit be caught away but a moment, one is new to begin. And as sciences have a propriety towards faculties for cure and help, so faculties or powers have a sympathy towards sciences for excellency or speedy profiting: and therefore it is an inquiry of great wisdom, what kinds of wits and natures are most apt and proper for what sciences.

Fourthly, the ordering of exercises is matter of great consequence to hurt or help: for, as is well observed by Cicero, men in exercising their faculties, if they be not well advised, do exercise their faults and get ill habits as well as good; so as there is a great judgment to be had in the continuance and intermission of exercises. It were too long to particularise a number of other considerations of this nature, things but of mean appearance, but of singular efficacy. For as the wronging or cherishing of seeds or young plants is that that is most important to their thriving, and as it was noted that the first six kings being in truth as tutors

of the state of Rome in the infancy thereof was the principal cause of the immense greatness of that state which followed, so the culture and manurance of minds in youth hath such a forcible (though unseen) operation, as hardly any length of time or contention of labour can countervail it afterwards. And it is not amiss to observe also how small and mean faculties gotten by education, yet when they fall into great men or great matters, do work great and important effects: whereof we see a notable example in Tacitus of two stage players, Percennius and Vibulenus, who by their faculty of playing put the Pannonian armies into an extreme tumult and combustion. For there arising a mutiny amongst them upon the death of Augustus Cæsar, Blæsus the lieutenant had committed some of the mutineers, which were suddenly rescued; whereupon Vibulenus got to be heard speak, which he did in this manner:— "These poor innocent wretches appointed to cruel death, you have restored to behold the light; but who shall restore my brother to me, or life unto my brother, that was sent hither in message from the legions of Germany, to treat of the common cause? and he hath murdered him this last night by some of his fencers and ruffians, that he hath about him for his executioners upon soldiers. Answer, Blæsus, what is done with his body? The mortalest enemies do not deny burial. When I have performed my last duties to the corpse with kisses, with tears, command me to be slain besides him; so that these my fellows, for our good meaning and our true hearts to the legions, may have leave to bury us." With which speech he put the army into an infinite fury and uproar: whereas truth was he had no brother, neither was there any such matter; but he played it merely as if he had been upon the stage.

(3) But to return: we are now come to a period of rational knowledges; wherein if I have made the divisions other than those that are received, yet would I not be thought to disallow all those divisions which I do not use. For there is a double necessity imposed upon me of altering the divisions. The one, because it differeth in end and purpose, to sort together those things which are next in nature, and those things which are next in use. For if a secretary of estate should sort his papers, it is like in his study or general cabinet he would sort

together things of a nature, as treaties, instructions, &c. But in his boxes or particular cabinet he would sort together those that he were like to use together, though of several natures. So in this general cabinet of knowledge it was necessary for me to follow the divisions of the nature of things; whereas if myself had been to handle any particular knowledge, I would have respected the divisions fittest for use. The other, because the bringing in of the deficiences did by consequence alter the partitions of the rest. For let the knowledge extant (for demonstration sake) be fifteen. Let the knowledge with the deficiences be twenty; the parts of fifteen are not the parts of twenty; for the parts of fifteen are three and five; the parts of twenty are two, four, five, and ten. So as these things are without contradiction, and could not otherwise be.

XX. (1) We proceed now to that knowledge which considereth of the appetite and will of man: whereof Solomon saith, *Ante omnia*, *fili*, *custodi cor tuum*: *nam inde procedunt actiones vitæ*. In the handling of this science, those which have written seem to me to have done as if a man, that professed to teach to write, did only exhibit fair copies of alphabets and letters joined, without giving any precepts or directions for the carriage of the hand and framing of the letters. So have they made good and fair exemplars and copies, carrying the draughts and portraitures of good, virtue, duty, felicity; propounding them well described as the true objects and scopes of man's will and desires. But how to attain these excellent marks, and how to frame and subdue the will of man to become true and conformable to these pursuits, they pass it over altogether, or slightly and unprofitably. For it is not the disputing that moral virtues are in the mind of man by habit and not by nature, or the distinguishing that generous spirits are won by doctrines and persuasions, and the vulgar sort by reward and punishment, and the like scattered glances and touches, that can excuse the absence of this part.

(2) The reason of this omission I suppose to be that hidden rock whereupon both this and many other barks of knowledge have been cast away; which is, that men have despised to be conversant in ordinary and common matters, the judicious direction whereof nevertheless is the wisest doctrine (for life consisteth not in novelties nor subtleties), but contrariwise they have compounded sciences

chiefly of a certain resplendent or lustrous mass of matter, chosen to give glory either to the subtlety of disputatious, or to the eloquence of discourses. But Seneca giveth an excellent check to eloquence, *Nocet illis eloquentia*, *quibus non rerum cupiditatem facit*, *sed sui*. Doctrine should be such as should make men in love with the lesson, and not with the teacher; being directed to the auditor's benefit, and not to the author's commendation. And therefore those are of the right kind which may be concluded as Demosthenes concludes his counsel, *Quæ si feceritis*, *non oratorem dumtaxat in præsentia laudabitis*, *sed vosmetipsos etiam non ita multo post statu rerum vestraram meliore*.

(3) Neither needed men of so excellent parts to have despaired of a fortune, which the poet Virgil promised himself, and indeed obtained, who got as much glory of eloquence, wit, and learning in the expressing of the observations of husbandry, as of the heroical acts of Æneas:

"Nec sum animi dubius, verbis ea vincere magnum
Quam sit, et angustis his addere rebus honorem."

And surely, if the purpose be in good earnest, not to write at leisure that which men may read at leisure, but really to instruct and suborn action and active life, these Georgics of the mind, concerning the husbandry and tillage thereof, are no less worthy than the heroical descriptions of virtue, duty, and felicity. Wherefore the main and primitive division of moral knowledge seemeth to be into the exemplar or platform of good, and the regiment or culture of the mind: the one describing the nature of good, the other prescribing rules how to subdue, apply, and accommodate the will of man thereunto.

(4) The doctrine touching the platform or nature of good considereth it either simple or compared; either the kinds of good, or the degrees of good; in the latter whereof those infinite disputatious which were touching the supreme degree thereof, which they term felicity, beatitude, or the highest good, the doctrines concerning which were as the heathen divinity, are by the Christian faith discharged. And as Aristotle saith, "That young men may be happy, but not

otherwise but by hope;" so we must all acknowledge our minority, and embrace the felicity which is by hope of the future world.

(5) Freed therefore and delivered from this doctrine of the philosopher's heaven, whereby they feigned a higher elevation of man's nature than was (for we see in what height of style Seneca writeth, *Vere magnum*, *habere fragilitatem hominis*, *securitatem Dei*), we may with more sobriety and truth receive the rest of their inquiries and labours. Wherein for the nature of good positive or simple, they have set it down excellently in describing the forms of virtue and duty, with their situations and postures; in distributing them into their kinds, parts, provinces, actions, and administrations, and the like: nay further, they have commended them to man's nature and spirit with great quickness of argument and beauty of persuasions; yea, and fortified and entrenched them (as much as discourse can do) against corrupt and popular opinions. Again, for the degrees and comparative nature of good, they have also excellently handled it in their triplicity of good, in the comparisons between a contemplative and an active life, in the distinction between virtue with reluctation and virtue secured, in their encounters between honesty and profit, in their balancing of virtue with virtue, and the like; so as this part deserveth to be reported for excellently laboured.

(6) Notwithstanding, if before they had come to the popular and received notions of virtue and vice, pleasure and pain, and the rest, they had stayed a little longer upon the inquiry concerning the roots of good and evil, and the strings of those roots, they had given, in my opinion, a great light to that which followed; and specially if they had consulted with nature, they had made their doctrines less prolix and more profound: which being by them in part omitted and in part handled with much confusion, we will endeavour to resume and open in a more clear manner.

(7) There is formed in everything a double nature of good — the one, as everything is a total or substantive in itself; the other, as it is a part or member of a greater body; whereof the latter is in degree the greater and the worthier, because it tendeth to the conservation of a more general form. Therefore we see the iron in particular sympathy moveth to the loadstone; but yet if it exceed a

certain quantity, it forsaketh the affection to the loadstone, and like a good patriot moveth to the earth, which is the region and country of massy bodies; so may we go forward, and see that water and massy bodies move to the centre of the earth; but rather than to suffer a divulsion in the continuance of nature, they will move upwards from the centre of the earth, forsaking their duty to the earth in regard of their duty to the world. This double nature of good, and the comparative thereof, is much more engraven upon man, if he degenerate not, unto whom the conservation of duty to the public ought to be much more precious than the conservation of life and being; according to that memorable speech of Pompeius Magnus, when being in commission of purveyance for a famine at Rome, and being dissuaded with great vehemency and instance by his friends about him, that he should not hazard himself to sea in an extremity of weather, he said only to them, *Necesse est ut eam*, *non ut vivam*. But it may be truly affirmed that there was never any philosophy, religion, or other discipline, which did so plainly and highly exalt the good which is communicative, and depress the good which is private and particular, as the Holy Faith; well declaring that it was the same God that gave the Christian law to men, who gave those laws of nature to inanimate creatures that we spake of before; for we read that the elected saints of God have wished themselves anathematised and razed out of the book of life, in an ecstasy of charity and infinite feeling of communion.

(8) This being set down and strongly planted, doth judge and determine most of the controversies wherein moral philosophy is conversant. For first, it decideth the question touching the preferment of the contemplative or active life, and decideth it against Aristotle. For all the reasons which he bringeth for the contemplative are private, and respecting the pleasure and dignity of a man's self (in which respects no question the contemplative life hath the pre-eminence), not much unlike to that comparison which Pythagoras made for the gracing and magnifying of philosophy and contemplation, who being asked what he was, answered, "That if Hiero were ever at the Olympian games, he knew the manner, that some came to try their fortune for the prizes, and some came as merchants to

utter their commodities, and some came to make good cheer and meet their friends, and some came to look on; and that he was one of them that came to look on." But men must know, that in this theatre of man's life it is reserved only for God and angels to be lookers on. Neither could the like question ever have been received in the Church, notwithstanding their *Pretiosa in oculis Domini mors sanctorum ejus*, by which place they would exalt their civil death and regular professions, but upon this defence, that the monastical life is not simple contemplative, but performeth the duty either of incessant prayers and supplications, which hath been truly esteemed as an office in the Church, or else of writing or taking instructions for writing concerning the law of God, as Moses did when he abode so long in the mount. And so we see Enoch, the seventh from Adam, who was the first contemplative and walked with God, yet did also endow the Church with prophecy, which Saint Jude citeth. But for contemplation which should be finished in itself, without casting beams upon society, assuredly divinity knoweth it not.

(9) It decideth also the controversies between Zeno and Socrates, and their schools and successions, on the one side, who placed felicity in virtue simply or attended, the actions and exercises whereof do chiefly embrace and concern society; and on the other side, the Cyrenaics and Epicureans, who placed it in pleasure, and made virtue (as it is used in some comedies of errors, wherein the mistress and the maid change habits) to be but as a servant, without which pleasure cannot be served and attended; and the reformed school of the Epicureans, which placed it in serenity of mind and freedom from perturbation; as if they would have deposed Jupiter again, and restored Saturn and the first age, when there was no summer nor winter, spring nor autumn, but all after one air and season; and Herillus, which placed felicity in extinguishment of the disputes of the mind, making no fixed nature of good and evil, esteeming things according to the clearness of the desires, or the reluctation; which opinion was revived in the heresy of the Anabaptists, measuring things according to the motions of the spirit, and the constancy or wavering of belief; all which are manifest to tend to private repose and contentment, and not to point of society.

(10) It censureth also the philosophy of Epictetus, which presupposeth that felicity must be placed in those things which are in our power, lest we be liable to fortune and disturbance; as if it were not a thing much more happy to fail in good and virtuous ends for the public, than to obtain all that we can wish to ourselves in our proper fortune: as Consalvo said to his soldiers, showing them Naples, and protesting he had rather die one foot forwards, than to have his life secured for long by one foot of retreat. Whereunto the wisdom of that heavenly leader hath signed, who hath affirmed that "a good conscience is a continual feast;" showing plainly that the conscience of good intentions, howsoever succeeding, is a more continual joy to nature than all the provision which can be made for security and repose.

(11) It censureth likewise that abuse of philosophy which grew general about the time of Epictetus, in converting it into an occupation or profession; as if the purpose had been, not to resist and extinguish perturbations, but to fly and avoid the causes of them, and to shape a particular kind and course of life to that end; introducing such a health of mind, as was that health of body of which Aristotle speaketh of Herodicus, who did nothing all his life long but intend his health; whereas if men refer themselves to duties of society, as that health of body is best which is ablest to endure all alterations and extremities, so likewise that health of mind is most proper which can go through the greatest temptations and perturbations. So as Diogenes' opinion is to be accepted, who commended not them which abstained, but them which sustained, and could refrain their mind *in præcipitio*, and could give unto the mind (as is used in horsemanship) the shortest stop or turn.

(12) Lastly, it censureth the tenderness and want of application in some of the most ancient and reverend philosophers and philosophical men, that did retire too easily from civil business, for avoiding of indignities and perturbations; whereas the resolution of men truly moral ought to be such as the same Consalvo said the honour of a soldier should be, *e telâ crassiore*, and not so fine as that everything should catch in it and endanger it.

XXI. (1) To resume private or particular good, it falleth into the division of good active and passive; for this difference of good (not unlike to that which amongst the Romans was expressed in the familiar or household terms of *promus* and *condus*) is formed also in all things, and is best disclosed in the two several appetites in creatures; the one to preserve or continue themselves, and the other to dilate or multiply themselves, whereof the latter seemeth to be the worthier; for in nature the heavens, which are the more worthy, are the agent, and the earth, which is the less worthy, is the patient. In the pleasures of living creatures, that of generation is greater than that of food. In divine doctrine, *beatius est dare quam accipere*. And in life, there is no man's spirit so soft, but esteemeth the effecting of somewhat that he hath fixed in his desire, more than sensuality, which priority of the active good is much upheld by the consideration of our estate to be mortal and exposed to fortune. For if we might have a perpetuity and certainty in our pleasures, the state of them would advance their price. But when we see it is but *magni æstimamus mori tardius*, and *ne glorieris de crastino*, *nescis partum diei*, it maketh us to desire to have somewhat secured and exempted from time, which are only our deeds and works; as it is said, *Opera eorum sequuntur eos*. The pre-eminence likewise of this active good is upheld by the affection which is natural in man towards variety and proceeding, which in the pleasures of the sense, which is the principal part of passive good, can have no great latitude. *Cogita quamdiu eadem feceris*; *cibus*, *somnus*, *ludus per hunc circulum curritur*; *mori velle non tantum fortis*, *aut miser*, *aut prudens*, *sed etiam fastidiosus potest*. But in enterprises, pursuits, and purposes of life, there is much variety; whereof men are sensible with pleasure in their inceptions, progressions, recoils, reintegrations, approaches and attainings to their ends. So as it was well said, *Vita sine proposito languida et vaga est*. Neither hath this active good an identity with the good of society, though in some cases it hath an incidence into it. For although it do many times bring forth acts of beneficence, yet it is with a respect private to a man's own power, glory, amplification, continuance; as appeareth plainly, when it findeth a contrary subject. For that gigantine state of mind which possesseth the troublers of the world, such as was

Lucius Sylla and infinite other in smaller model, who would have all men happy or unhappy as they were their friends or enemies, and would give form to the world, according to their own humours (which is the true theomachy), pretendeth and aspireth to active good, though it recedeth furthest from good of society, which we have determined to be the greater.

(2) To resume passive good, it receiveth a subdivision of conservative and effective. For let us take a brief review of that which we have said: we have spoken first of the good of society, the intention whereof embraceth the form of human nature, whereof we are members and portions, and not our own proper and individual form; we have spoken of active good, and supposed it as a part of private and particular good. And rightly, for there is impressed upon all things a triple desire or appetite proceeding from love to themselves: one of preserving and continuing their form; another of advancing and perfecting their form; and a third of multiplying and extending their form upon other things: whereof the multiplying, or signature of it upon other things, is that which we handled by the name of active good. So as there remaineth the conserving of it, and perfecting or raising of it, which latter is the highest degree of passive good. For to preserve in state is the less, to preserve with advancement is the greater. So in man,

"Igneus est ollis vigor, et cælestis origo."

His approach or assumption to divine or angelical nature is the perfection of his form; the error or false imitation of which good is that which is the tempest of human life; while man, upon the instinct of an advancement, formal and essential, is carried to seek an advancement local. For as those which are sick, and find no remedy, do tumble up and down and change place, as if by a remove local they could obtain a remove internal, so is it with men in ambition, when failing of the mean to exalt their nature, they are in a perpetual estuation to exalt their place. So then passive good is, as was said, either conservative or perfective.

(3) To resume the good of conservation or comfort, which consisteth in the fruition of that which is agreeable to our natures; it seemeth to be most pure and

natural of pleasures, but yet the softest and lowest. And this also receiveth a difference, which hath neither been well judged of, nor well inquired; for the good of fruition or contentment is placed either in the sincereness of the fruition, or in the quickness and vigour of it; the one superinduced by equality, the other by vicissitude; the one having less mixture of evil, the other more impression of good. Whether of these is the greater good is a question controverted; but whether man's nature may not be capable of both is a question not inquired.

(4) The former question being debated between Socrates and a sophist, Socrates placing felicity in an equal and constant peace of mind, and the sophist in much desiring and much enjoying, they fell from argument to ill words: the sophist saying that Socrates' felicity was the felicity of a block or stone; and Socrates saying that the sophist's felicity was the felicity of one that had the itch, who did nothing but itch and scratch. And both these opinions do not want their supports. For the opinion of Socrates is much upheld by the general consent even of the epicures themselves, that virtue beareth a great part in felicity; and if so, certain it is, that virtue hath more use in clearing perturbations then in compassing desires. The sophist's opinion is much favoured by the assertion we last spake of, that good of advancement is greater than good of simple preservation; because every obtaining a desire hath a show of advancement, as motion though in a circle hath a show of progression.

(5) But the second question, decided the true way, maketh the former superfluous. For can it be doubted, but that there are some who take more pleasure in enjoying pleasures than some other, and yet, nevertheless, are less troubled with the loss or leaving of them? So as this same, *Non uti ut non appetas*, *non appetere ut non metuas*, *sunt animi pusilli et diffidentis*. And it seemeth to me that most of the doctrines of the philosophers are more fearful and cautious than the nature of things requireth. So have they increased the fear of death in offering to cure it. For when they would have a man's whole life to be but a discipline or preparation to die, they must needs make men think that it is a terrible enemy, against whom there is no end of preparing. Better saith the poet:

—

“Qui finem vitæ extremum inter munera ponat
Naturæ.”

So have they sought to make men’s minds too uniform and harmonical, by not breaking them sufficiently to contrary motions; the reasons whereof I suppose to be, because they themselves were men dedicated to a private, free, and unapplied course of life. For as we see, upon the lute or like instrument, a ground, though it be sweet and have show of many changes, yet breaketh not the hand to such strange and hard stops and passages, as a set song or voluntary; much after the same manner was the diversity between a philosophical and civil life. And, therefore, men are to imitate the wisdom of jewellers: who, if there be a grain, or a cloud, or an ice which may be ground forth without taking too much of the stone, they help it; but if it should lessen and abate the stone too much, they will not meddle with it: so ought men so to procure serenity as they destroy not magnanimity.

(6) Having therefore deduced the good of man which is private and particular, as far as seemeth fit, we will now return to that good of man which respecteth and beholdeth society, which we may term duty; because the term of duty is more proper to a mind well framed and disposed towards others, as the term of virtue is applied to a mind well formed and composed in itself; though neither can a man understand virtue without some relation to society, nor duty without an inward disposition. This part may seem at first to pertain to science civil and politic; but not if it be well observed. For it concerneth the regiment and government of every man over himself, and not over others. And as in architecture the direction of framing the posts, beams, and other parts of building, is not the same with the manner of joining them and erecting the building; and in mechanicals, the direction how to frame an instrument or engine is not the same with the manner of setting it on work and employing it; and yet, nevertheless, in expressing of the one you incidently express the aptness towards the other; so the doctrine of conjugation of men in society differeth from that of their conformity thereunto.

(7) This part of duty is subdivided into two parts: the common duty of every man, as a man or member of a state; the other, the respective or special duty of every man in his profession, vocation, and place. The first of these is extant and well laboured, as hath been said. The second likewise I may report rather dispersed than deficient; which manner of dispersed writing in this kind of argument I acknowledge to be best. For who can take upon him to write of the proper duty, virtue, challenge, and right of every several vocation, profession, and place? For although sometimes a looker on may see more than a gamester, and there be a proverb more arrogant than sound, "That the vale best discovereth the hill;" yet there is small doubt but that men can write best and most really and materially in their own professions; and that the writing of speculative men of active matter for the most part doth seem to men of experience, as Phormio's argument of the wars seemed to Hannibal, to be but dreams and dotage. Only there is one vice which accompanieth them that write in their own professions, that they magnify them in excess. But generally it were to be wished (as that which would make learning indeed solid and fruitful) that active men would or could become writers.

(8) In which kind I cannot but mention, *honoris causa*, your Majesty's excellent book touching the duty of a king; a work richly compounded of divinity, morality, and policy, with great aspersion of all other arts; and being in some opinion one of the most sound and healthful writings that I have read: not distempered in the heat of invention, nor in the coldness of negligence; not sick of dizziness, as those are who leese themselves in their order, nor of convulsions, as those which cramp in matters impertinent; not savouring of perfumes and paintings, as those do who seek to please the reader more than nature beareth; and chiefly well disposed in the spirits thereof, being agreeable to truth and apt for action; and far removed from that natural infirmity, whereunto I noted those that write in their own professions to be subject — which is, that they exalt it above measure. For your Majesty hath truly described, not a king of Assyria or Persia in their extern glory, but a Moses or a David, pastors of their people. Neither can I ever leese out of my remembrance what I heard your Majesty in

the same sacred spirit of government deliver in a great cause of judicature, which was, "That kings ruled by their laws, as God did by the laws of nature; and ought as rarely to put in use their supreme prerogative as God doth His power of working miracles." And yet notwithstanding in your book of a free monarchy, you do well give men to understand, that you know the plenitude of the power and right of a king, as well as the circle of his office and duty. Thus have I presumed to allege this excellent writing of your Majesty, as a prime or eminent example of tractates concerning special and respective duties; wherein I should have said as much, if it had been written a thousand years since. Neither am I moved with certain courtly decencies, which esteem it flattery to praise in presence. No, it is flattery to praise in absence — that is, when either the virtue is absent, or the occasion is absent; and so the praise is not natural, but forced, either in truth or in time. But let Cicero be read in his oration *pro Marcello*, which is nothing but an excellent table of Cæsar's virtue, and made to his face; besides the example of many other excellent persons, wiser a great deal than such observers; and we will never doubt, upon a full occasion, to give just praises to present or absent.

(9) But to return; there belongeth further to the handling of this part, touching the duties of professions and vocations, a relative or opposite, touching the frauds, cautels, impostures, and vices of every profession, which hath been likewise handled; but how? rather in a satire and cynically, than seriously and wisely; for men have rather sought by wit to deride and traduce much of that which is good in professions, than with judgment to discover and sever that which is corrupt. For, as Solomon saith, he that cometh to seek after knowledge with a mind to scorn and censure shall be sure to find matter for his humour, but no matter for his instruction: *Quærenti derisori scientiam ipsa se abscondit*; *sed studioso fit obviam*. But the managing of this argument with integrity and truth, which I note as deficient, seemeth to me to be one of the best fortifications for honesty and virtue that can be planted. For, as the fable goeth of the basilisk — that if he see you first, you die for it; but if you see him first, he dieth — so is it with deceits and evil arts, which, if they be first espied they leese their life; but if

they prevent, they endanger. So that we are much beholden to Machiavel and others, that write what men do, and not what they ought to do. For it is not possible to join serpentine wisdom with the columbine innocency, except men know exactly all the conditions of the serpent; his baseness and going upon his belly, his volubility and lubricity, his envy and sting, and the rest — that is, all forms and natures of evil. For without this, virtue lieth open and unfenced. Nay, an honest man can do no good upon those that are wicked, to reclaim them, without the help of the knowledge of evil. For men of corrupted minds presuppose that honesty groweth out of simplicity of manners, and believing of preachers, schoolmasters, and men's exterior language. So as, except you can make them perceive that you know the utmost reaches of their own corrupt opinions, they despise all morality. *Non recipit stultus verba prudentiæ*, *nisi ea dixeris quæ*, *versantur in corde ejus*.

(10) Unto this part, touching respective duty, doth also appertain the duties between husband and wife, parent and child, master and servant. So likewise the laws of friendship and gratitude, the civil bond of companies, colleges, and politic bodies, of neighbourhood, and all other proportionate duties; not as they are parts of government and society, but as to the framing of the mind of particular persons.

(11) The knowledge concerning good respecting society doth handle it also, not simply alone, but comparatively; whereunto belongeth the weighing of duties between person and person, case and case, particular and public. As we see in the proceeding of Lucius Brutus against his own sons, which was so much extolled, yet what was said?

"Infelix, utcunque ferent ea fata minores."

So the case was doubtful, and had opinion on both sides. Again, we see when M. Brutus and Cassius invited to a supper certain whose opinions they meant to feel, whether they were fit to be made their associates, and cast forth the question touching the killing of a tyrant being a usurper, they were divided in opinion; some holding that servitude was the extreme of evils, and others that tyranny was better than a civil war: and a number of the like cases there are of

comparative duty. Amongst which that of all others is the most frequent, where the question is of a great deal of good to ensue of a small injustice. Which Jason of Thessalia determined against the truth: *Aliqua sunt injuste facienda*, *ut multa juste fieri possint*. But the reply is good: *Auctorem præsentis justitiæ habes*, *sponsorem futuræ non habes*. Men must pursue things which are just in present, and leave the future to the Divine Providence. So then we pass on from this general part touching the exemplar and description of good.

XXII. (1) Now, therefore, that we have spoken of this fruit of life, it remaineth to speak of the husbandry that belongeth thereunto, without which part the former seemeth to be no better than a fair image or statue, which is beautiful to contemplate, but is without life and motion; whereunto Aristotle himself subscribeth in these words: *Necesse est scilicet de virtute dicere*, *et quid sit*, *et ex quibus gignatur*. *Inutile enum fere fuerit virtutem quidem nosse*, *acquirendæ autem ejus modos et vias ignorare*. *Non enum de virtute tantum*, *qua specie sit*, *quærendum est*, *sed et quomodo sui copiam faciat*: *utrumque enum volumeus*, *et rem ipsam nosse*, *et ejus compotes fieri*: *hoc autem ex voto non succedet*, *nisi sciamus et ex quibus et quomodo*. In such full words and with such iteration doth he inculcate this part. So saith Cicero in great commendation of Cato the second, that he had applied himself to philosophy, *Non ita disputandi causa*, *sed ita vivendi*. And although the neglect of our times, wherein few men do hold any consultations touching the reformation of their life (as Seneca excellently saith, *De partibus vitæ quisque deliberat*, *de summa nemo*), may make this part seem superfluous; yet I must conclude with that aphorism of Hippocrates, *Qui gravi morbo correpti dolores non sentiunt*, *iis mens ægrotat*. They need medicine, not only to assuage the disease, but to awake the sense. And if it be said that the cure of men's minds belongeth to sacred divinity, it is most true; but yet moral philosophy may be preferred unto her as a wise servant and humble handmaid. For as the Psalm saith, "That the eyes of the handmaid look perpetually towards the mistress," and yet no doubt many things are left to the discretion of the handmaid to discern of the mistress' will; so ought moral

philosophy to give a constant attention to the doctrines of divinity, and yet so as it may yield of herself (within due limits) many sound and profitable directions.

(2) This part, therefore, because of the excellency thereof, I cannot but find exceeding strange that it is not reduced to written inquiry; the rather, because it consisteth of much matter, wherein both speech and action is often conversant; and such wherein the common talk of men (which is rare, but yet cometh sometimes to pass) is wiser than their books. It is reasonable, therefore, that we propound it in the more particularity, both for the worthiness, and because we may acquit ourselves for reporting it deficient, which seemeth almost incredible, and is otherwise conceived and presupposed by those themselves that have written. We will, therefore, enumerate some heads or points thereof, that it may appear the better what it is, and whether it be extant.

(3) First, therefore, in this, as in all things which are practical we ought to cast up our account, what is in our power, and what not; for the one may be dealt with by way of alteration, but the other by way of application only. The husbandman cannot command neither the nature of the earth nor the seasons of the weather; no more can the physician the constitution of the patient nor the variety of accidents. So in the culture and cure of the mind of man, two things are without our command: points of Nature, and points of fortune. For to the basis of the one, and the conditions of the other, our work is limited and tied. In these things, therefore, it is left unto us to proceed by application: —

"Vincenda est omnis fertuna ferendo:"

and so likewise,

"Vincenda est omnis Natura ferendo."

But when that we speak of suffering, we do not speak of a dull and neglected suffering, but of a wise and industrious suffering, which draweth and contriveth use and advantage out of that which seemeth adverse and contrary; which is that properly which we call accommodating or applying. Now the wisdom of application resteth principally in the exact and distinct knowledge of the precedent state or disposition, unto which we do apply; for we cannot fit a garment except we first take measure of the body.

(4) So, then, the first article of this knowledge is to set down sound and true distributions and descriptions of the several characters and tempers of men's natures and dispositions, specially having regard to those differences which are most radical in being the fountains and causes of the rest, or most frequent in concurrence or commixture; wherein it is not the handling of a few of them in passage, the better to describe the mediocrities of virtues, that can satisfy this intention. For if it deserve to be considered, that there are minds which are proportioned to great matters, and others to small (which Aristotle handleth, or ought to have bandied, by the name of magnanimity), doth it not deserve as well to be considered that there are minds proportioned to intend many matters, and others to few? So that some can divide themselves: others can perchance do exactly well, but it must be but in few things at once; and so there cometh to be a narrowness of mind, as well as a pusillanimity. And again, that some minds are proportioned to that which may be dispatched at once, or within a short return of time; others to that which begins afar off, and is to be won with length of pursuit: — "Jam tum tenditqus fovetque."

So that there may be fitly said to be a longanimity, which is commonly also ascribed to God as a magnanimity. So further deserved it to be considered by Aristotle, "That there is a disposition in conversation (supposing it in things which do in no sort touch or concern a man's self) to soothe and please, and a disposition contrary to contradict and cross;" and deserveth it not much better to be considered. "That there is a disposition, not in conversation or talk, but in matter of more serious nature (and supposing it still in things merely indifferent), to take pleasure in the good of another; and a disposition contrariwise, to take distaste at the good of another?" which is that properly which we call good nature or ill nature, benignity or malignity; and, therefore, I cannot sufficiently marvel that this part of knowledge, touching the several characters of natures and dispositions, should be omitted both in morality and policy, considering it is of so great ministry and suppeditation to them both. A man shall find in the traditions of astrology some pretty and apt divisions of men's natures, according to the predominances of the planets: lovers of quiet, lovers of action, lovers of

victory, lovers of honour, lovers of pleasure, lovers of arts, lovers of change, and so forth. A man shall find in the wisest sort of these relations which the Italians make touching conclaves, the natures of the several cardinals handsomely and lively painted forth. A man shall meet with in every day's conference the denominations of sensitive, dry, formal, real, humorous, certain, *huomo di prima impressione*, *huomo di ultima impressione*, and the like; and yet, nevertheless, this kind of observations wandereth in words, but is not fixed in inquiry. For the distinctions are found (many of them), but we conclude no precepts upon them: wherein our fault is the greater, because both history, poesy, and daily experience are as goodly fields where these observations grow; whereof we make a few posies to hold in our hands, but no man bringeth them to the confectionary that receipts might be made of them for use of life.

(5) Of much like kind are those impressions of Nature, which are imposed upon the mind by the sex, by the age, by the region, by health and sickness, by beauty and deformity, and the like, which are inherent and not extern; and again, those which are caused by extern fortune, as sovereignty, nobility, obscure birth, riches, want, magistracy, privateness, prosperity, adversity, constant fortune, variable fortune, rising *per saltum*, *per gradus*, and the like. And, therefore, we see that Plautus maketh it a wonder to see an old man beneficent, *benignitas hujis ut adolescentuli est*. Saint Paul concludeth that severity of discipline was to be used to the Cretans, *increpa eos dure*, upon the disposition of their country, *Cretensus semper mendaces*, *malæ bestiæ*, *ventres*. Sallust noteth that it is usual with kings to desire contradictories: *Sed plerumque regiæ voluntates*, *ut vehementes sunt*, *sic mobiles*, *sæpeque ipsæ sibi advers*. Tacitus observeth how rarely raising of the fortune mendeth the disposition: *solus Vespasianus mutatus in melius*. Pindarus maketh an observation, that great and sudden fortune for the most part defeateth men *qui magnam felicitatem concoquere non possunt*. So the Psalm showeth it is more easy to keep a measure in the enjoying of fortune, than in the increase of fortune; *Divitiæ si affluant*, *nolite cor apponere*. These observations and the like I deny not but are touched a little by Aristotle as in passage in his Rhetorics, and are handled in some scattered discourses; but they

were never incorporate into moral philosophy, to which they do essentially appertain; as the knowledge of this diversity of grounds and moulds doth to agriculture, and the knowledge of the diversity of complexions and constitutions doth to the physician, except we mean to follow the indiscretion of empirics, which minister the same medicines to all patients.

(6) Another article of this knowledge is the inquiry touching the affections; for as in medicining of the body, it is in order first to know the divers complexions and constitutions; secondly, the diseases; and lastly, the cures: so in medicining of the mind, after knowledge of the divers characters of men's natures, it followeth in order to know the diseases and infirmities of the mind, which are no other than the perturbations and distempars of the affections. For as the ancient politiques in popular estates were wont to compare the people to the sea, and the orators to the winds; because as the sea would of itself be calm and quiet, if the winds did not move and trouble it; so the people would be peaceable and tractable if the seditious orators did not set them in working and agitation: so it may be fitly said, that the mind in the nature thereof would be temperate and stayed, if the affections, as winds, did not put it into tumult and perturbation. And here again I find strange, as before, that Aristotle should have written divers volumes of Ethics, and never handled the affections which is the principal subject thereof; and yet in his Rhetorics, where they are considered but collaterally and in a second degree (as they may be moved by speech), he findeth place for them, and handleth them well for the quantity; but where their true place is he pretermitteth them. For it is not his disputations about pleasure and pain that can satisfy this inquiry, no more than he that should generally handle the nature of light can be said to handle the nature of colours; for pleasure and pain are to the particular affections as light is to particular colours. Better travails, I suppose, had the Stoics taken in this argument, as far as I can gather by that which we have at second hand. But yet it is like it was after their manner, rather in subtlety of definitions (which in a subject of this nature are but curiosities), than in active and ample descriptions and observations. So likewise I find some particular writings of an elegant nature, touching some of the

affections: as of anger, of comfort upon adverse accidents, of tenderness of countenance, and other. But the poets and writers of histories are the best doctors of this knowledge; where we may find painted forth, with great life, how affections are kindled and incited; and how pacified and refrained; and how again contained from act and further degree; how they disclose themselves; how they work; how they vary; how they gather and fortify: how they are enwrapped one within another; and how they do fight and encounter one with another; and other the like particularities. Amongst the which this last is of special use in moral and civil matters; how, I say, to set affection against affection, and to master one by another; even as we used to hunt beast with beast, and fly bird with bird, which otherwise percase we could not so easily recover: upon which foundation is erected that excellent use of *præmium* and *pæna*, whereby civil states consist: employing the predominant affections of fear and hope, for the suppressing and bridling the rest. For as in the government of states it is sometimes necessary to bridle one faction with another, so it is in the government within.

(7) Now come we to those points which are within our own command, and have force and operation upon the mind, to affect the will and appetite, and to alter manners: wherein they ought to have handled custom, exercise, habit, education, example, imitation, emulation, company, friends, praise, reproof, exhortation, fame, laws, books, studies: these as they have determinate use in moralities, from these the mind suffereth, and of these are such receipts and regiments compounded and described, as may serve to recover or preserve the health and good estate of the mind, as far as pertaineth to human medicine: of which number we will insist upon some one or two, as an example of the rest, because it were too long to prosecute all; and therefore we do resume custom and habit to speak of.

(8) The opinion of Aristotle seemeth to me a negligent opinion, that of those things which consist by Nature, nothing can be changed by custom; using for example, that if a stone be thrown ten thousand times up it will not learn to ascend; and that by often seeing or hearing we do not learn to see or hear the

better. For though this principle be true in things wherein Nature is peremptory (the reason whereof we cannot now stand to discuss), yet it is otherwise in things wherein Nature admitteth a latitude. For he might see that a strait glove will come more easily on with use; and that a wand will by use bend otherwise than it grew; and that by use of the voice we speak louder and stronger; and that by use of enduring heat or cold we endure it the better, and the like: which latter sort have a nearer resemblance unto that subject of manners he handleth, than those instances which he allegeth. But allowing his conclusion, that virtues and vices consist in habit, he ought so much the more to have taught the manner of superinducing that habit: for there be many precepts of the wise ordering the exercises of the mind, as there is of ordering the exercises of the body, whereof we will recite a few.

(9) The first shall be, that we beware we take not at the first either too high a strain or too weak: for if too high, in a diffident nature you discourage, in a confident nature you breed an opinion of facility, and so a sloth; and in all natures you breed a further expectation than can hold out, and so an insatisfaction in the end: if too weak, of the other side, you may not look to perform and overcome any great task.

(10) Another precept is to practise all things chiefly at two several times, the one when the mind is best disposed, the other when it is worst disposed; that by the one you may gain a great step, by the other you may work out the knots and stonds of the mind, and make the middle times the more easy and pleasant.

(11) Another precept is that which Aristotle mentioneth by the way, which is to bear ever towards the contrary extreme of that whereunto we are by nature inclined; like unto the rowing against the stream, or making a wand straight by bending him contrary to his natural crookedness.

(12) Another precept is that the mind is brought to anything better, and with more sweetness and happiness, if that whereunto you pretend be not first in the intention, but *tanquam aliud agendo*, because of the natural hatred of the mind against necessity and constraint. Many other axioms there are touching the managing of exercise and custom, which being so conducted doth prove indeed

another nature; but, being governed by chance, doth commonly prove but an ape of Nature, and bringeth forth that which is lame and counterfeit.

(13) So if we should handle books and studies, and what influence and operation they have upon manners, are there not divers precepts of great caution and direction appertaining thereunto? Did not one of the fathers in great indignation call poesy *vinum dæmonum*, because it increaseth temptations, perturbations, and vain opinions? Is not the opinion of Aristotle worthy to be regarded, wherein he saith, "That young men are no fit auditors of moral philosophy, because they are not settled from the boiling heat of their affections, nor attempered with time and experience"? And doth it not hereof come, that those excellent books and discourses of the ancient writers (whereby they have persuaded unto virtue most effectually, by representing her in state and majesty, and popular opinions against virtue in their parasites' coats fit to be scorned and derided), are of so little effect towards honesty of life, because they are not read and revolved by men in their mature and settled years, but confined almost to boys and beginners? But is it not true also, that much less young men are fit auditors of matters of policy, till they have been thoroughly seasoned in religion and morality; lest their judgments be corrupted, and made apt to think that there are no true differences of things, but according to utility and fortune, as the verse describes it, *Prosperum et felix scelus virtus vocatur*; and again, *Ille crucem pretium sceleris tulit*, *hic diadema*: which the poets do speak satirically and in indignation on virtue's behalf; but books of policy do speak it seriously and positively; for so it pleaseth Machiavel to say, "That if Cæsar had been overthrown, he would have been more odious than ever was Catiline;" as if there had been no difference, but in fortune, between a very fury of lust and blood, and the most excellent spirit (his ambition reserved) of the world? Again, is there not a caution likewise to be given of the doctrines of moralities themselves (some kinds of them), lest they make men too precise, arrogant, incompatible; as Cicero saith of Cato, *In Marco Catone hæc bona quæ videmus divina et egregia*, *ipsius scitote esse propria*; *quæ nonunquam requirimus ea sunt omnia non a natura*, *sed a magistro*? Many other axioms and advices there are touching

those proprieties and effects, which studies do infuse and instil into manners. And so, likewise, is there touching the use of all those other points, of company, fame, laws, and the rest, which we recited in the beginning in the doctrine of morality.

(14) But there is a kind of culture of the mind that seemeth yet more accurate and elaborate than the rest, and is built upon this ground; that the minds of all men are at some times in a state more perfect, and at other times in a state more depraved. The purpose, therefore, of this practice is to fix and cherish the good hours of the mind, and to obliterate and take forth the evil. The fixing of the good hath been practised by two means, vows or constant resolutions, and observances or exercises; which are not to be regarded so much in themselves, as because they keep the mind in continual obedience. The obliteration of the evil hath been practised by two means, some kind of redemption or expiation of that which is past, and an inception or account *de novo* for the time to come. But this part seemeth sacred and religious, and justly; for all good moral philosophy (as was said) is but a handmaid to religion.

(15) Wherefore we will conclude with that last point, which is of all other means the most compendious and summary, and again, the most noble and effectual to the reducing of the mind unto virtue and good estate; which is, the electing and propounding unto a man's self good and virtuous ends of his life, such as may be in a reasonable sort within his compass to attain. For if these two things be supposed, that a man set before him honest and good ends, and again, that he be resolute, constant, and true unto them; it will follow that he shall mould himself into all virtue at once. And this indeed is like the work of nature; whereas the other course is like the work of the hand. For as when a carver makes an image, he shapes only that part whereupon he worketh; as if he be upon the face, that part which shall be the body is but a rude stone still, till such times as he comes to it. But contrariwise when nature makes a flower or living creature, she formeth rudiments of all the parts at one time. So in obtaining virtue by habit, while a man practiseth temperance, he doth not profit much to fortitude, nor the like but when he dedicateth and applieth himself to

good ends, look, what virtue soever the pursuit and passage towards those ends doth commend unto him, he is invested of a precedent disposition to conform himself thereunto. Which state of mind Aristotle doth excellently express himself, that it ought not to be called virtuous, but divine. His words are these: *Immanitati autem consentaneum est opponere eam*, *quæ supra humanitatem est*, *heroicam sive divinam virtutem*; and a little after, *Nam ut feræ neque vitium neque virtus est*, *swic neque Dei*: *sed hic quidem status altius quiddam virtute est*, *ille aluid quiddam a vitio*. And therefore we may see what celsitude of honour Plinius Secundus attributeth to Trajan in his funeral oration, where he said, "That men needed to make no other prayers to the gods, but that they would continue as good lords to them as Trajan had been;" as if he had not been only an imitation of divine nature, but a pattern of it. But these be heathen and profane passages, having but a shadow of that divine state of mind, which religion and the holy faith doth conduct men unto, by imprinting upon their souls charity, which is excellently called the bond of perfection, because it comprehendeth and fasteneth all virtues together. And as it is elegantly said by Menander of vain love, which is but a false imitation of divine love, *Amor melior Sophista lævo ad humanam vitam* — that love teacheth a man to carry himself better than the sophist or preceptor; which he calleth left-handed, because, with all his rules and preceptions, he cannot form a man so dexterously, nor with that facility to prize himself and govern himself, as love can do: so certainly, if a man's mind be truly inflamed with charity, it doth work him suddenly into greater perfection than all the doctrine of morality can do, which is but a sophist in comparison of the other. Nay, further, as Xenophon observed truly, that all other affections, though they raise the mind, yet they do it by distorting and uncomeliness of ecstasies or excesses; but only love doth exalt the mind, and nevertheless at the same instant doth settle and compose it: so in all other excellences, though they advance nature, yet they are subject to excess. Only charity admitteth no excess. For so we see, aspiring to be like God in power, the angels transgressed and fell; *Ascendam*, *et ero similis altissimo*: by aspiring to be like God in knowledge, man transgressed and fell; *Eritis sicut Dii*,

scientes bonum et malum: but by aspiring to a similitude of God in goodness or love, neither man nor angel ever transgressed, or shall transgress. For unto that imitation we are called: *Diligite inimicos vestros*, *benefacite eis qui oderunt vos*, *et orate pro persequentibus et calumniantibus vos*, *ut sitis filii Patris vestri qui in cœlis est*, *qui solem suum oriri facit super bonos et malos*, *et pluit super justos et injustos*. So in the first platform of the divine nature itself, the heathen religion speaketh thus, *Optimus Maximus*: and the sacred Scriptures thus, *Miscericordia ejus super omnia opera ejus*.

(16) Wherefore I do conclude this part of moral knowledge, concerning the culture and regiment of the mind; wherein if any man, considering the arts thereof which I have enumerated, do judge that my labour is but to collect into an art or science that which hath been pretermitted by others, as matter of common sense and experience, he judgeth well. But as Philocrates sported with Demosthenes, "You may not marvel (Athenians) that Demosthenes and I do differ; for he drinketh water, and I drink wine;" and like as we read of an ancient parable of the two gates of sleep — "Sunt geminæ somni portæ: quarum altera fertur

Cornea, qua veris facilis datur exitus umbris:
Altera candenti perfecta nitens elephanto,
Sed falsa ad cœlum mittunt insomnia manes:"

so if we put on sobriety and attention, we shall find it a sure maxim in knowledge, that the more pleasant liquor ("of wine") is the more vaporous, and the braver gate ("of ivory") sendeth forth the falser dreams.

(17) But we have now concluded that general part of human philosophy, which contemplateth man segregate, and as he consisteth of body and spirit. Wherein we may further note, that there seemeth to be a relation or conformity between the good of the mind and the good of the body. For as we divided the good of the body into health, beauty, strength, and pleasure, so the good of the mind, inquired in rational and moral knowledges, tendeth to this, to make the mind sound, and without perturbation; beautiful, and graced with decency; and strong and agile for all duties of life. These three, as in the body, so in the mind,

seldom meet, and commonly sever. For it is easy to observe, that many have strength of wit and courage, but have neither health from perturbations, nor any beauty or decency in their doings; some again have an elegancy and fineness of carriage which have neither soundness of honesty nor substance of sufficiency; and some again have honest and reformed minds, that can neither become themselves nor manage business; and sometimes two of them meet, and rarely all three. As for pleasure, we have likewise determined that the mind ought not to be reduced to stupid, but to retain pleasure; confined rather in the subject of it, than in the strength and vigour of it.

XXIII. (1) Civil knowledge is conversant about a subject which of all others is most immersed in matter, and hardliest reduced to axiom. Nevertheless, as Cato the Censor said, "That the Romans were like sheep, for that a man were better drive a flock of them, than one of them; for in a flock, if you could get but some few go right, the rest would follow:" so in that respect moral philosophy is more difficile than policy. Again, moral philosophy propoundeth to itself the framing of internal goodness; but civil knowledge requireth only an external goodness; for that as to society sufficeth. And therefore it cometh oft to pass that there be evil times in good governments: for so we find in the Holy story, when the kings were good, yet it is added, *Sed adhuc poulus non direxerat cor suum ad Dominum Deum patrum suorum*. Again, states, as great engines, move slowly, and are not so soon put out of frame: for as in Egypt the seven good years sustained the seven bad, so governments for a time well grounded do bear out errors following; but the resolution of particular persons is more suddenly subverted. These respects do somewhat qualify the extreme difficulty of civil knowledge.

(2) This knowledge hath three parts, according to the three summary actions of society; which are conversation, negotiation, and government. For man seeketh in society comfort, use, and protection; and they be three wisdoms of divers natures which do often sever — wisdom of the behaviour, wisdom of business, and wisdom of state.

(3) The wisdom of conversation ought not to be over much affected, but much less despised; for it hath not only an honour in itself, but an influence also into business and government. The poet saith, *Nec vultu destrue verba tuo*: a man may destroy the force of his words with his countenance; so may he of his deeds, saith Cicero, recommending to his brother affability and easy access; *Nil interest habere ostium apertum*, *vultum clausum*: it is nothing won to admit men with an open door, and to receive them with a shut and reserved countenance. So we see Atticus, before the first interview between Cæsar and Cicero, the war depending, did seriously advise Cicero touching the composing and ordering of his countenance and gesture. And if the government of the countenance be of such effect, much more is that of the speech, and other carriage appertaining to conversation; the true model whereof seemeth to me well expressed by Livy, though not meant for this purpose: *Ne aut arrogans videar*, *aut obnoxius*; *quorum alterum est àlienæ libertatis obliti*, *alterum suæ*: the sum of behaviour is to retain a man's own dignity, without intruding upon the liberty of others. On the other side, if behaviour and outward carriage be intended too much, first it may pass into affectation, and then *Quid deformius quam scenam in vitam transferre* — to act a man's life? But although it proceed not to that extreme, yet it consumeth time, and employeth the mind too much. And therefore as we use to advise young students from company keeping, by saying, *Amici fures temporis*: so certainly the intending of the discretion of behaviour is a great thief of meditation. Again, such as are accomplished in that form of urbanity please themselves in it, and seldom aspire to higher virtue; whereas those that have defect in it do seek comeliness by reputation; for where reputation is, almost everything becometh; but where that is not, it must be supplied by *puntos* and compliments. Again, there is no greater impediment of action than an over-curious observance of decency, and the guide of decency, which is time and season. For as Solomon saith, *Qui respicit ad ventos*, *non seminat*; *et qui respicit ad nubes*, *non metet*: a man must make his opportunity, as oft as find it. To conclude, behaviour seemeth to me as a garment of the mind, and to have the conditions of a garment. For it ought to be made in fashion; it ought not to be

too curious; it ought to be shaped so as to set forth any good making of the mind and hide any deformity; and above all, it ought not to be too strait or restrained for exercise or motion. But this part of civil knowledge hath been elegantly handled, and therefore I cannot report it for deficient.

(4) The wisdom touching negotiation or business hath not been hitherto collected into writing, to the great derogation of learning and the professors of learning. For from this root springeth chiefly that note or opinion, which by us is expressed in adage to this effect, that there is no great concurrence between learning and wisdom. For of the three wisdoms which we have set down to pertain to civil life, for wisdom of behaviour, it is by learned men for the most part despised, as an inferior to virtue and an enemy to meditation; for wisdom of government, they acquit themselves well when they are called to it, but that happeneth to few; but for the wisdom of business, wherein man's life is most conversant, there be no books of it, except some few scattered advertisements, that have no proportion to the magnitude of this subject. For if books were written of this as the other, I doubt not but learned men with mean experience would far excel men of long experience without learning, and outshoot them in their own bow.

(5) Neither needeth it at all to be doubted, that this knowledge should be so variable as it falleth not under precept; for it is much less infinite than science of government, which we see is laboured and in some part reduced. Of this wisdom it seemeth some of the ancient Romans in the saddest and wisest times were professors; for Cicero reporteth, that it was then in use for senators that had name and opinion for general wise men, as Coruncanius, Curius, Lælius, and many others, to walk at certain hours in the Place, and to give audience to those that would use their advice; and that the particular citizens would resort unto them, and consult with them of the marriage of a daughter, or of the employing of a son, or of a purchase or bargain, or of an accusation, and every other occasion incident to man's life. So as there is a wisdom of counsel and advice even in private causes, arising out of a universal insight into the affairs of the world; which is used indeed upon particular causes propounded, but is gathered

by general observation of causes of like nature. For so we see in the book which Q. Cicero writeth to his brother, *De petitione consulatus* (being the only book of business that I know written by the ancients), although it concerned a particular action then on foot, yet the substance thereof consisteth of many wise and politic axioms, which contain not a temporary, but a perpetual direction in the case of popular elections. But chiefly we may see in those aphorisms which have place amongst divine writings, composed by Solomon the king, of whom the Scriptures testify that his heart was as the sands of the sea, encompassing the world and all worldly matters, we see, I say, not a few profound and excellent cautions, precepts, positions, extending to much variety of occasions; whereupon we will stay a while, offering to consideration some number of examples.

(6) *Sed et cunctis sermonibus qui dicuntur ne accommodes aurem tuam*, *ne forte audias servum tuum maledicentem tibi*. Here is commended the provident stay of inquiry of that which we would be loth to find: as it was judged great wisdom in Pompeius Magnus that he burned Sertorius' papers unperused.

Vir sapiens, *si cum stulto contenderit*, *sive irascatur*, *sive rideat*, *non inveniet requiem*. Here is described the great disadvantage which a wise man hath in undertaking a lighter person than himself; which is such an engagement as, whether a man turn the matter to jest, or turn it to heat, or howsoever he change copy, he can no ways quit himself well of it.

Qui delicate a pueritia nutrit servum suum, *postea sentiet eum contumacem*. Here is signified, that if a man begin too high a pitch in his favours, it doth commonly end in unkindness and unthankfulness.

Vidisti virum velocem in opere suo? *coram regibus stabit*, *nec erit inter ignobiles*. Here is observed, that of all virtues for rising to honour, quickness of despatch is the best; for superiors many times love not to have those they employ too deep or too sufficient, but ready and diligent.

Vidi cunctos viventes qui ambulant sub sole, *cum adolescente secundo qui consurgit pro eo*. Here is expressed that which was noted by Sylla first, and after him by Tiberius. *Plures adorant solem orientem quam occidentem vel meridianum*.

Si spiritus potestatem habentis ascenderit super te, *locum tuum ne demiseris*; *quia curatio faciet cessare peccata maxima*. Here caution is given, that upon displeasure, retiring is of all courses the unfittest; for a man leaveth things at worst, and depriveth himself of means to make them better.

Erat civitas parva, *et pauci in ea viri*: *venit contra eam rex magnus*, *et vallavit eam*, *instruxitque munitones per gyrum*, *et perfecta est obsidio*; *inventusque est in ea vir pauper et sapiens*, *et liberavit eam per sapientiam suam*; *et nullus deinceps recordatus est huminis illius pauperis*. Here the corruption of states is set forth, that esteem not virtue or merit longer than they have use of it.

Millis responsio frangit iram. Here is noted that silence or rough answer exasperateth; but an answer present and temperate pacifieth.

Iter pigrorum quasi sepes spinarum. Here is lively represented how laborious sloth proveth in the end; for when things are deferred till the last instant, and nothing prepared beforehand, every step findeth a briar or impediment, which catcheth or stoppeth.

Melior est finis orationis quam principium. Here is taxed the vanity of formal speakers, that study more about prefaces and inducements, than upon the conclusions and issues of speech.

Qui cognoscit in judicio faciem, *non bene facit*; *iste et pro buccella panis deseret veritatem*. Here is noted, that a judge were better be a briber than a respecter of persons; for a corrupt judge offendeth not so lightly as a facile.

Vir pauper calumnians pauperes simils est imbri vehementi, *in quo paratur fames*. Here is expressed the extremity of necessitous extortions, figured in the ancient fable of the full and the hungry horseleech.

Fons turbatus pede, *et vena corrupta*, *est justus cadens coram impio*. Here is noted, that one judicial and exemplar iniquity in the face of the world doth trouble the fountains of justice more than many particular injuries passed over by connivance.

Qui subtrahit aliquid a patre et a matre, *et dicit hoc non esse peccatum*, *particeps est homicidii*. Here is noted that, whereas men in wronging their best

friends use to extenuate their fault, as if they might presume or be bold upon them, it doth contrariwise indeed aggravate their fault, and turneth it from injury to impiety.

Noli esse amicus homini iracundo, *nec ambulato cum homine furioso*. Here caution is given, that in the election of our friends we do principally avoid those which are impatient, as those that will espouse us to many factions and quarrels.

Qui conturbat domum suam, *possidebit ventum*. Here is noted, that in domestical separations and breaches men do promise to themselves quieting of their mind and contentment; but still they are deceived of their expectation, and it turneth to wind.

Filius sapiens lætificat patrem: *filius vero stultus mæstitia est matri suæ*. Here is distinguished, that fathers have most comfort of the good proof of their sons; but mothers have most discomfort of their ill proof, because women have little discerning of virtue, but of fortune.

Qui celat delictum, *quærit amicitiam*; *sed qui altero sermone repetit*, *separat fœderatos*. Here caution is given, that reconcilement is better managed by an amnesty, and passing over that which is past, than by apologies and excuses.

In omni opere bono erit abundantia; *ubi autem verba sunt plurima*, *ibi frequenter egestas*. Here is noted, that words and discourse aboundeth most where there is idleness and want.

Primus in sua causa justus: *sed venit altera pars*, *et inquiret in eum*. Here is observed, that in all causes the first tale possesseth much; in sort, that the prejudice thereby wrought will be hardly removed, except some abuse or falsity in the information be detected.

Verba bilinguis quasi simplicia, *et ipsa perveniunt ad interiora ventris*. Here is distinguished, that flattery and insinuation, which seemeth set and artificial, sinketh not far; but that entereth deep which hath show of nature, liberty, and simplicity.

Qui erudit derisorem, *ipse sibi injuriam facit*; *et qui arguit impium*, *sibi maculam generat*. Here caution is given how we tender reprehension to arrogant

and scornful natures, whose manner is to esteem it for contumely, and accordingly to return it.

Da sapienti occasionem, *et addetur ei sapientia*. Here is distinguished the wisdom brought into habit, and that which is but verbal and swimming only in conceit; for the one upon the occasion presented is quickened and redoubled, the other is amazed and confused.

Quomodo in aquis resplendent vultus prospicientium, *sic corda hominum manifesta sunt prudentibus*. Here the mind of a wise man is compared to a glass, wherein the images of all diversity of natures and customs are represented; from which representation proceedeth that application, "Qui sapit, innumeris moribus aptus erit."

(7) Thus have I stayed somewhat longer upon these sentences politic of Solomon than is agreeable to the proportion of an example; led with a desire to give authority to this part of knowledge, which I noted as deficient, by so excellent a precedent; and have also attended them with brief observations, such as to my understanding offer no violence to the sense, though I know they may be applied to a more divine use: but it is allowed, even in divinity, that some interpretations, yea, and some writings, have more of the eagle than others; but taking them as instructions for life, they might have received large discourse, if I would have broken them and illustrated them by deducements and examples.

(8) Neither was this in use only with the Hebrews, but it is generally to be found in the wisdom of the more ancient times; that as men found out any observation that they thought was good for life, they would gather it and express it in parable or aphorism or fable. But for fables, they were vicegerents and supplies where examples failed: now that the times abound with history, the aim is better when the mark is alive. And therefore the form of writing which of all others is fittest for this variable argument of negotiation and occasions is that which Machiavel chose wisely and aptly for government; namely, discourse upon histories or examples. For knowledge drawn freshly and in our view out of particulars, knoweth the way best to particulars again. And it hath much greater life for practice when the discourse attendeth upon the example, than when the

example attendeth upon the discourse. For this is no point of order, as it seemeth at first, but of substance. For when the example is the ground, being set down in a history at large, it is set down with all circumstances, which may sometimes control the discourse thereupon made, and sometimes supply it, as a very pattern for action; whereas the examples alleged for the discourse's sake are cited succinctly, and without particularity, and carry a servile aspect towards the discourse which they are brought in to make good.

(9) But this difference is not amiss to be remembered, that as history of times is the best ground for discourse of government, such as Machiavel handleth, so histories of lives is the most popular for discourse of business, because it is more conversant in private actions. Nay, there is a ground of discourse for this purpose fitter than them both, which is discourse upon letters, such as are wise and weighty, as many are of Cicero *ad Atticum*, and others. For letters have a great and more particular representation of business than either chronicles or lives. Thus have we spoken both of the matter and form of this part of civil knowledge, touching negotiation, which we note to be deficient.

(10) But yet there is another part of this part, which differeth as much from that whereof we have spoken as *sapere* and *sibi sapere*, the one moving as it were to the circumference, the other to the centre. For there is a wisdom of counsel, and again there is a wisdom of pressing a man's own fortune; and they do sometimes meet, and often sever. For many are wise in their own ways that are weak for government or counsel; like ants, which is a wise creature for itself, but very hurtful for the garden. This wisdom the Romans did take much knowledge of: *Nam pol sapiens* (saith the comical poet) *fingit fortunam sibi*; and it grew to an adage, *Faber quisque fortunæ propriæ*; and Livy attributed it to Cato the first, *In hoc viro tanta vis animi et ingenii inerat*, *ut quocunque loco natus esset sibi ipse fortunam facturus videretur*.

(11) This conceit or position, if it be too much declared and professed, hath been thought a thing impolitic and unlucky, as was observed in Timotheus the Athenian, who, having done many great services to the state in his government, and giving an account thereof to the people as the manner was, did conclude

every particular with this clause, “And in this fortune had no part.” And it came so to pass, that he never prospered in anything he took in hand afterwards. For this is too high and too arrogant, savouring of that which Ezekiel saith of Pharaoh, *Dicis*, *Fluvius est neus et ego feci memet ipsum*; or of that which another prophet speaketh, that men offer sacrifices to their nets and snares; and that which the poet expresseth, “Dextra mihi Deus, et telum quod missile libro,
Nunc adsint!”

For these confidences were ever unhallowed, and unblessed; and, therefore, those that were great politiques indeed ever ascribed their successes to their felicity and not to their skill or virtue. For so Sylla surnamed himself Felix, not Magnus. So Cæsar said to the master of the ship, *Cæsarem portas et fortunam ejus*.

(12) But yet, nevertheless, these positions, *Faber quisque fortunæ suæ*: *Sapiens dominabitur astris*: *Invia virtuti null est via*, and the like, being taken and used as spurs to industry, and not as stirrups to insolency, rather for resolution than for the presumption or outward declaration, have been ever thought sound and good; and are no question imprinted in the greatest minds, who are so sensible of this opinion as they can scarce contain it within. As we see in Augustus Cæsar (who was rather diverse from his uncle than inferior in virtue), how when he died he desired his friends about him to give him a *plaudite*, as if he were conscious to himself that he had played his part well upon the stage. This part of knowledge we do report also as deficient; not but that it is practised too much, but it hath not been reduced to writing. And, therefore, lest it should seem to any that it is not comprehensible by axiom, it is requisite, as we did in the former, that we set down some heads or passages of it.

(13) Wherein it may appear at the first a new and unwonted argument to teach men how to raise and make their fortune; a doctrine wherein every man perchance will be ready to yield himself a disciple, till he see the difficulty: for fortune layeth as heavy impositions as virtue; and it is as hard and severe a thing to be a true politique, as to be truly moral. But the handling hereof concerneth learning greatly, both in honour and in substance. In honour, because

pragmatical men may not go away with an opinion that learning is like a lark, that can mount and sing, and please herself, and nothing else; but may know that she holdeth as well of the hawk, that can soar aloft, and can also descend and strike upon the prey. In substance, because it is the perfect law of inquiry of truth, that nothing be in the globe of matter, which should not be likewise in the globe of crystal or form; that is, that there be not anything in being and action which should not be drawn and collected into contemplation and doctrine. Neither doth learning admire or esteem of this architecture of fortune otherwise than as of an inferior work, for no man's fortune can be an end worthy of his being, and many times the worthiest men do abandon their fortune willingly for better respects: but nevertheless fortune as an organ of virtue and merit deserveth the consideration.

(14) First, therefore, the precept which I conceive to be most summary towards the prevailing in fortune, is to obtain that window which Momus did require; who seeing in the frame of man's heart such angles and recesses, found fault there was not a window to look into them; that is, to procure good informations of particulars touching persons, their natures, their desires and ends, their customs and fashions, their helps and advantages, and whereby they chiefly stand, so again their weaknesses and disadvantages, and where they lie most open and obnoxious, their friends, factions, dependences; and again their opposites, enviers, competitors, their moods and times, *Sola viri molles aditus et tempora noras*; their principles, rules, and observations, and the like: and this not only of persons but of actions; what are on foot from time to time, and how they are conducted, favoured, opposed, and how they import, and the like. For the knowledge of present actions is not only material in itself, but without it also the knowledge of persons is very erroneous: for men change with the actions; and whilst they are in pursuit they are one, and when they return to their nature they are another. These informations of particulars, touching persons and actions, are as the minor propositions in every active syllogism; for no excellency of observations (which are as the major propositions) can suffice to ground a conclusion, if there be error and mistaking in the minors.

(15) That this knowledge is possible, Solomon is our surety, who saith, *Consilium in corde viri tanquam aqua profunda*; *sed vir prudens exhauriet illud*. And although the knowledge itself falleth not under precept because it is of individuals, yet the instructions for the obtaining of it may.

(16) We will begin, therefore, with this precept, according to the ancient opinion, that the sinews of wisdom are slowness of belief and distrust; that more trust be given to countenances and deeds than to words; and in words rather to sudden passages and surprised words than to set and purposed words. Neither let that be feared which is said, *Fronti nulla fides*, which is meant of a general outward behaviour, and not of the private and subtle motions and labours of the countenance and gesture; which, as Q. Cicero elegantly saith, is *Animi janua*, "the gate of the mind." None more close than Tiberius, and yet Tacitus saith of Gallus, *Etenim vultu offensionem conjectaverat*. So again, noting the differing character and manner of his commending Germanicus and Drusus in the Senate, he saith, touching his fashion wherein he carried his speech of Germanicus, thus: *Magis in speciem adornatis verbis*, *quam ut penitus sentire crederetur*; but of Drusus thus: *Paucioribus sed intentior*, *et fida oratione*; and in another place, speaking of his character of speech when he did anything that was gracious and popular, he saith, "That in other things he was *velut eluctantium verborum*;" but then again, *solutius loquebatur quando subveniret*. So that there is no such artificer of dissimulation, nor no such commanded countenance (*vultus jussus*), that can sever from a feigned tale some of these fashions, either a more slight and careless fashion, or more set and formal, or more tedious and wandering, or coming from a man more drily and hardly.

(17) Neither are deeds such assured pledges as that they may be trusted without a judicious consideration of their magnitude and nature: *Fraus sibi in parvis fidem præstruit ut majore emolumento fallat*; and the Italian thinketh himself upon the point to be bought and sold, when he is better used than he was wont to be without manifest cause. For small favours, they do but lull men to sleep, both as to caution and as to industry; and are, as Demosthenes calleth them, *Alimenta socordiæ*. So again we see how false the nature of some deeds

are, in that particular which Mutianus practised upon Antonius Primus, upon that hollow and unfaithful reconcilement which was made between them; whereupon Mutianus advanced many of the friends of Antonius, *Simul amicis ejus præfecturas et tribunatus largitur*: wherein, under pretence to strengthen him, he did desolate him, and won from him his dependents.

(18) As for words, though they be like waters to physicians, full of flattery and uncertainty, yet they are not to be despised specially with the advantage of passion and affection. For so we see Tiberius, upon a stinging and incensing speech of Agrippina, came a step forth of his dissimulation when he said, "You are hurt because you do not reign;" of which Tacitus saith, *Audita hæc raram occulti pectoris vocem elicuere*: *correptamque Græco versu admonuit*, *ideo lædi quia non regnaret*. And, therefore, the poet doth elegantly call passions tortures that urge men to confess their secrets: — "Vino torus et ira."

And experience showeth there are few men so true to themselves and so settled but that, sometimes upon heat, sometimes upon bravery, sometimes upon kindness, sometimes upon trouble of mind and weakness, they open themselves; specially if they be put to it with a counter-dissimulation, according to the proverb of Spain, *Di mentira*, *y sacar as verdad*: "Tell a lie and find a truth."

(19) As for the knowing of men which is at second hand from reports: men's weaknesses and faults are best known from their enemies, their virtues and abilities from their friends, their customs and times from their servants, their conceits and opinions from their familiar friends, with whom they discourse most. General fame is light, and the opinions conceived by superiors or equals are deceitful; for to such men are more masked: *Verior fama e domesticis emanat*.

(20) But the soundest disclosing and expounding of men is by their natures and ends, wherein the weakest sort of men are best interpreted by their natures, and the wisest by their ends. For it was both pleasantly and wisely said (though I think very untruly) by a nuncio of the Pope, returning from a certain nation where he served as lidger; whose opinion being asked touching the appointment of one to go in his place, he wished that in any case they did not send one that

was too wise; because no very wise man would ever imagine what they in that country were like to do. And certainly it is an error frequent for men to shoot over, and to suppose deeper ends and more compass reaches than are: the Italian proverb being elegant, and for the most part true: — "Di danari, di senno, e di fede,
C'è ne manco che non credi."

"There is commonly less money, less wisdom, and less good faith than men do account upon."

(21) But princes, upon a far other reason, are best interpreted by their natures, and private persons by their ends. For princes being at the top of human desires, they have for the most part no particular ends whereto they aspire, by distance from which a man might take measure and scale of the rest of their actions and desires; which is one of the causes that maketh their hearts more inscrutable. Neither is it sufficient to inform ourselves in men's ends and natures of the variety of them only, but also of the predominancy, what humour reigneth most, and what end is principally sought. For so we see, when Tigellinus saw himself outstripped by Petronius Turpilianus in Nero's humours of pleasures, *metus ejus rimatur*, he wrought upon Nero's fears, whereby he broke the other's neck.

(22) But to all this part of inquiry the most compendious way resteth in three things; the first, to have general acquaintance and inwardness with those which have general acquaintance and look most into the world; and specially according to the diversity of business, and the diversity of persons, to have privacy and conversation with some one friend at least which is perfect and well-intelligenced in every several kind. The second is to keep a good mediocrity in liberty of speech and secrecy; in most things liberty; secrecy where it importeth; for liberty of speech inviteth and provoketh liberty to be used again, and so bringeth much to a man's knowledge; and secrecy on the other side induceth trust and inwardness. The last is the reducing of a man's self to this watchful and serene habit, as to make account and purpose, in every conference and action, as well to observe as to act. For as Epictetus would have a philosopher in every particular action to say to himself, *Et hoc volo*, *et etiam institutum servare*;

so a politic man in everything should say to himself, *Et hoc volo*, *ac etiam aliquid addiscere*. I have stayed the longer upon this precept of obtaining good information because it is a main part by itself, which answereth to all the rest. But, above all things, caution must be taken that men have a good stay and hold of themselves, and that this much knowing do not draw on much meddling; for nothing is more unfortunate than light and rash intermeddling in many matters. So that this variety of knowledge tendeth in conclusion but only to this, to make a better and freer choice of those actions which may concern us, and to conduct them with the less error and the more dexterity.

(23) The second precept concerning this knowledge is, for men to take good information touching their own person, and well to understand themselves; knowing that, as St. James saith, though men look oft in a glass, yet they do suddenly forget themselves; wherein as the divine glass is the Word of God, so the politic glass is the state of the world, or times wherein we live, in the which we are to behold ourselves.

(24) For men ought to take an impartial view of their own abilities and virtues; and again of their wants and impediments; accounting these with the most, and those other with the least; and from this view and examination to frame the considerations following.

(25) First, to consider how the constitution of their nature sorteth with the general state of the times; which if they find agreeable and fit, then in all things to give themselves more scope and liberty; but if differing and dissonant, then in the whole course of their life to be more close retired, and reserved; as we see in Tiberius, who was never seen at a play, and came not into the senate in twelve of his last years; whereas Augustus Cæsar lived ever in men's eyes, which Tacitus observeth, *alia Tiberio morum via*.

(26) Secondly, to consider how their nature sorteth with professions and courses of life, and accordingly to make election, if they be free; and, if engaged, to make the departure at the first opportunity; as we see was done by Duke Valentine, that was designed by his father to a sacerdotal profession, but quitted

it soon after in regard of his parts and inclination; being such, nevertheless, as a man cannot tell well whether they were worse for a prince or for a priest.

(27) Thirdly, to consider how they sort with those whom they are like to have competitors and concurrents; and to take that course wherein there is most solitude, and themselves like to be most eminent; as Cæsar Julius did, who at first was an orator or pleader; but when he saw the excellency of Cicero, Hortensius, Catulus, and others for eloquence, and saw there was no man of reputation for the wars but Pompeius, upon whom the state was forced to rely, he forsook his course begun towards a civil and popular greatness, and transferred his designs to a martial greatness.

(28) Fourthly, in the choice of their friends and dependents, to proceed according to the composition of their own nature; as we may see in Cæsar, all whose friends and followers were men active and effectual, but not solemn, or of reputation.

(29) Fifthly, to take special heed how they guide themselves by examples, in thinking they can do as they see others do; whereas perhaps their natures and carriages are far differing. In which error it seemeth Pompey was, of whom Cicero saith that he was wont often to say, *Sylla potuit*, *ego non potero*? Wherein he was much abused, the natures and proceedings of himself and his example being the unlikest in the world; the one being fierce, violent, and pressing the fact; the other solemn, and full of majesty and circumstance, and therefore the less effectual.

But this precept touching the politic knowledge of ourselves hath many other branches, whereupon we cannot insist.

(30) Next to the well understanding and discerning of a man's self, there followeth the well opening and revealing a man's self; wherein we see nothing more usual than for the more able man to make the less show. For there is a great advantage in the well setting forth of a man's virtues, fortunes, merits; and again, in the artificial covering of a man's weaknesses, defects, disgraces; staying upon the one, sliding from the other; cherishing the one by circumstances, gracing the other by exposition, and the like. Wherein we see

what Tacitus saith of Mutianus, who was the greatest politique of his time, *Omnium quæ dixerat feceratque arte quadam ostentator*, which requireth indeed some art, lest it turn tedious and arrogant; but yet so, as ostentation (though it be to the first degree of vanity) seemeth to me rather a vice in manners than in policy; for as it is said, *Audacter calumniare*, *semper aliquid hæret*; so, except it be in a ridiculous degree of deformity, *Audacter te vendita*, *semper aluquid hæret*. For it will stick with the more ignorant and inferior sort of men, though men of wisdom and rank do smile at it and despise it; and yet the authority won with many doth countervail the disdain of a few. But if it be carried with decency and government, as with a natural, pleasant, and ingenious fashion; or at times when it is mixed with some peril and unsafety (as in military persons); or at times when others are most envied; or with easy and careless passage to it and from it, without dwelling too long, or being too serious; or with an equal freedom of taxing a man's self, as well as gracing himself; or by occasion of repelling or putting down others' injury or insolency; it doth greatly add to reputation: and surely not a few solid natures, that want this ventosity and cannot sail in the height of the winds, are not without some prejudice and disadvantage by their moderation.

(31) But for these flourishes and enhancements of virtue, as they are not perchance unnecessary, so it is at least necessary that virtue be not disvalued and embased under the just price, which is done in three manners — by offering and obtruding a man's self, wherein men think he is rewarded when he is accepted; by doing too much, which will not give that which is well done leave to settle, and in the end induceth satiety; and by finding too soon the fruit of a man's virtue, in commendation, applause, honour, favour; wherein if a man be pleased with a little, let him hear what is truly said: *Cave ne insuetus rebus majoribus videaris*, *si hæc te res parva sicuti magna delectat*.

(32) But the covering of defects is of no less importance than the valuing of good parts; which may be done likewise in three manners — by caution, by colour, and by confidence. Caution is when men do ingeniously and discreetly avoid to be put into those things for which they are not proper; whereas

contrariwise bold and unquiet spirits will thrust themselves into matters without difference, and so publish and proclaim all their wants. Colour is when men make a way for themselves to have a construction made of their faults or wants, as proceeding from a better cause or intended for some other purpose. For of the one it is well said, "Sæpe latet vitium proximitate boni,"

and therefore whatsoever want a man hath, he must see that he pretend the virtue that shadoweth it; as if he be dull, he must affect gravity; if a coward, mildness; and so the rest. For the second, a man must frame some probable cause why he should not do his best, and why he should dissemble his abilities; and for that purpose must use to dissemble those abilities which are notorious in him, to give colour that his true wants are but industries and dissimulations. For confidence, it is the last but the surest remedy — namely, to depress and seem to despise whatsoever a man cannot attain; observing the good principle of the merchants, who endeavour to raise the price of their own commodities, and to beat down the price of others. But there is a confidence that passeth this other, which is to face out a man's own defects, in seeming to conceive that he is best in those things wherein he is failing; and, to help that again, to seem on the other side that he hath least opinion of himself in those things wherein he is best: like as we shall see it commonly in poets, that if they show their verses, and you except to any, they will say, "That that line cost them more labour than any of the rest;" and presently will seem to disable and suspect rather some other line, which they know well enough to be the best in the number. But above all, in this righting and helping of a man's self in his own carriage, he must take heed he show not himself dismantled and exposed to scorn and injury, by too much dulceness, goodness, and facility of nature; but show some sparkles of liberty, spirit, and edge. Which kind of fortified carriage, with a ready rescussing of a man's self from scorns, is sometimes of necessity imposed upon men by somewhat in their person or fortune; but it ever succeedeth with good felicity.

(33) Another precept of this knowledge is by all possible endeavour to frame the mind to be pliant and obedient to occasion; for nothing hindereth men's fortunes so much as this: *Idem manebat*, *neque idem decebat* — men are where

they were, when occasions turn: and therefore to Cato, whom Livy maketh such an architect of fortune, he addeth that he had *versatile ingenium*. And thereof it cometh that these grave solemn wits, which must be like themselves and cannot make departures, have more dignity than felicity. But in some it is nature to be somewhat vicious and enwrapped, and not easy to turn. In some it is a conceit that is almost a nature, which is, that men can hardly make themselves believe that they ought to change their course, when they have found good by it in former experience. For Machiavel noted wisely how Fabius Maximus would have been temporising still, according to his old bias, when the nature of the war was altered and required hot pursuit. In some other it is want of point and penetration in their judgment, that they do not discern when things have a period, but come in too late after the occasion; as Demosthenes compareth the people of Athens to country fellows, when they play in a fence school, that if they have a blow, then they remove their weapon to that ward, and not before. In some other it is a lothness to lose labours passed, and a conceit that they can bring about occasions to their ply; and yet in the end, when they see no other remedy, then they come to it with disadvantage; as Tarquinius, that gave for the third part of Sibylla's books the treble price, when he might at first have had all three for the simple. But from whatsoever root or cause this restiveness of mind proceedeth, it is a thing most prejudicial; and nothing is more politic than to make the wheels of our mind concentric and voluble with the wheels of fortune.

(34) Another precept of this knowledge, which hath some affinity with that we last spoke of, but with difference, is that which is well expressed, *Fatis accede deisque*, that men do not only turn with the occasions, but also run with the occasions, and not strain their credit or strength to over-hard or extreme points; but choose in their actions that which is most passable: for this will preserve men from foil, not occupy them too much about one matter, win opinion of moderation, please the most, and make a show of a perpetual felicity in all they undertake: which cannot but mightily increase reputation.

(35) Another part of this knowledge seemeth to have some repugnancy with the former two, but not as I understand it; and it is that which Demosthenes

uttereth in high terms: *Et quemadmodum receptum est*, *ut exercitum ducat imperator*, *sic et a cordatis viris res ipsæ ducendæ*; *ut quæipsis videntur*, *ea gerantur*, *et non ipsi eventus persequi cogantur*. For if we observe we shall find two differing kinds of sufficiency in managing of business: some can make use of occasions aptly and dexterously, but plot little; some can urge and pursue their own plots well, but cannot accommodate nor take in; either of which is very imperfect without the other.

(36) Another part of this knowledge is the observing a good mediocrity in the declaring or not declaring a man's self: for although depth of secrecy, and making way (*qualis est via navis in mari*, which the French calleth *sourdes menées*, when men set things in work without opening themselves at all), be sometimes both prosperous and admirable; yet many times *dissimulatio errores parit*, *qui dissimulatorem ipsum illaqueant*. And therefore we see the greatest politiques have in a natural and free manner professed their desires, rather than been reserved and disguised in them. For so we see that Lucius Sylla made a kind of profession, "that he wished all men happy or unhappy, as they stood his friends or enemies." So Cæsar, when he went first into Gaul, made no scruple to profess "that he had rather be first in a village than second at Rome." So again, as soon as he had begun the war, we see what Cicero saith of him, *Alter* (meaning of Cæsar) *non recusat*, *sed quodammodo postulat*, *ut* (*ut est*) *sic appelletur tyrannus*. So we may see in a letter of Cicero to Atticus, that Augustus Cæsar, in his very entrance into affairs, when he was a darling of the senate, yet in his harangues to the people would swear, *Ita parentis honores consequi liceat* (which was no less than the tyranny), save that, to help it, he would stretch forth his hand towards a statue of Cæsar's that was erected in the place: and men laughed and wondered, and said, "Is it possible?" or, "Did you ever hear the like?" and yet thought he meant no hurt; he did it so handsomely and ingenuously. And all these were prosperous: whereas Pompey, who tended to the same ends, but in a more dark and dissembling manner as Tacitus saith of him, *Occultior non melior*, wherein Sallust concurreth, *Ore probo*, *animo inverecundo*, made it his design, by infinite secret engines, to cast the state into

an absolute anarchy and confusion, that the state might cast itself into his arms for necessity and protection, and so the sovereign power be put upon him, and he never seen in it: and when he had brought it (as he thought) to that point when he was chosen consul alone, as never any was, yet he could make no great matter of it, because men understood him not; but was fain in the end to go the beaten track of getting arms into his hands, by colour of the doubt of Cæsar's designs: so tedious, casual, and unfortunate are these deep dissimulations: whereof it seemeth Tacitus made this judgment, that they were a cunning of an inferior form in regard of true policy; attributing the one to Augustus, the other to Tiberius; where, speaking of Livia, he saith, *Et cum artibus mariti simulatione filii bene compostia*: for surely the continual habit of dissimulation is but a weak and sluggish cunning, and not greatly politic.

(37) Another precept of this architecture of fortune is to accustom our minds to judge of the proportion or value of things, as they conduce and are material to our particular ends; and that to do substantially and not superficially. For we shall find the logical part (as I may term it) of some men's minds good, but the mathematical part erroneous; that is, they can well judge of consequences, but not of proportions and comparison, preferring things of show and sense before things of substance and effect. So some fall in love with access to princes, others with popular fame and applause, supposing they are things of great purchase, when in many cases they are but matters of envy, peril, and impediment. So some measure things according to the labour and difficulty or assiduity which are spent about them; and think, if they be ever moving, that they must needs advance and proceed; as Cæsar saith in a despising manner of Cato the second, when he describeth how laborious and indefatigable he was to no great purpose, *Hæc omnia magno studio agebat*. So in most things men are ready to abuse themselves in thinking the greatest means to be best, when it should be the fittest.

(38) As for the true marshalling of men's pursuits towards their fortune, as they are more or less material, I hold them to stand thus. First the amendment of their own minds. For the removal of the impediments of the mind will sooner

clear the passages of fortune than the obtaining fortune will remove the impediments of the mind. In the second place I set down wealth and means; which I know most men would have placed first, because of the general use which it beareth towards all variety of occasions. But that opinion I may condemn with like reason as Machiavel doth that other, that moneys were the sinews of the wars; whereas (saith he) the true sinews of the wars are the sinews of men's arms, that is, a valiant, populous, and military nation: and he voucheth aptly the authority of Solon, who, when Crœsus showed him his treasury of gold, said to him, that if another came that had better iron, he would be master of his gold. In like manner it may be truly affirmed that it is not moneys that are the sinews of fortune, but it is the sinews and steel of men's minds, wit, courage, audacity, resolution, temper, industry, and the like. In the third place I set down reputation, because of the peremptory tides and currents it hath; which, if they be not taken in their due time, are seldom recovered, it being extreme hard to play an after-game of reputation. And lastly I place honour, which is more easily won by any of the other three, much more by all, than any of them can be purchased by honour. To conclude this precept, as there is order and priority in matter, so is there in time, the preposterous placing whereof is one of the commonest errors: while men fly to their ends when they should intend their beginnings, and do not take things in order of time as they come on, but marshal them according to greatness and not according to instance; not observing the good precept, *Quod nunc instat agamus*.

(39) Another precept of this knowledge is not to embrace any matters which do occupy too great a quantity of time, but to have that sounding in a man's ears, *Sed fugit interea fugit irreparabile tempus*: and that is the cause why those which take their course of rising by professions of burden, as lawyers, orators, painful divines, and the like, are not commonly so politic for their own fortune, otherwise than in their ordinary way, because they want time to learn particulars, to wait occasions, and to devise plots.

(40) Another precept of this knowledge is to imitate nature, which doth nothing in vain; which surely a man may do if he do well interlace his business,

and bend not his mind too much upon that which he principally intendeth. For a man ought in every particular action so to carry the motions of his mind, and so to have one thing under another, as if he cannot have that he seeketh in the best degree, yet to have it in a second, or so in a third; and if he can have no part of that which he purposed, yet to turn the use of it to somewhat else; and if he cannot make anything of it for the present, yet to make it as a seed of somewhat in time to come; and if he can contrive no effect or substance from it, yet to win some good opinion by it, or the like. So that he should exact an account of himself of every action, to reap somewhat, and not to stand amazed and confused if he fail of that he chiefly meant: for nothing is more impolitic than to mind actions wholly one by one. For he that doth so loseth infinite occasions which intervene, and are many times more proper and propitious for somewhat that he shall need afterwards, than for that which he urgeth for the present; and therefore men must be perfect in that rule, *Hæc oportet facere*, *et illa non imittere*.

(41) Another precept of this knowledge is, not to engage a man's self peremptorily in anything, though it seem not liable to accident; but ever to have a window to fly out at, or a way to retire: following the wisdom in the ancient fable of the two frogs, which consulted when their plash was dry whither they should go; and the one moved to go down into a pit, because it was not likely the water would dry there; but the other answered, "True, but if it do, how shall we get out again?"

(42) Another precept of this knowledge is that ancient precept of Bias, construed not to any point of perfidiousness, but to caution and moderation, *Et ama tanquam inimicus futurus et odi tanquam amaturus*. For it utterly betrayeth all utility for men to embark themselves too far into unfortunate friendships, troublesome spleens, and childish and humorous envies or emulations.

(43) But I continue this beyond the measure of an example; led, because I would not have such knowledges, which I note as deficient, to be thought things imaginative or in the air, or an observation or two much made of, but things of bulk and mass, whereof an end is more hardly made than a beginning. It must be

likewise conceived, that in these points which I mention and set down, they are far from complete tractates of them, but only as small pieces for patterns. And lastly, no man I suppose will think that I mean fortunes are not obtained without all this ado; for I know they come tumbling into some men's laps; and a number obtain good fortunes by diligence in a plain way, little intermeddling, and keeping themselves from gross errors.

(44) But as Cicero, when he setteth down an idea of a perfect orator, doth not mean that every pleader should be such; and so likewise, when a prince or a courtier hath been described by such as have handled those subjects, the mould hath used to be made according to the perfection of the art, and not according to common practice: so I understand it, that it ought to be done in the description of a politic man, I mean politic for his own fortune.

(45) But it must be remembered all this while, that the precepts which we have set down are of that kind which may be counted and called *Bonæ Artes*. As for evil arts, if a man would set down for himself that principle of Machiavel, "That a man seek not to attain virtue itself, but the appearance only thereof; because the credit of virtue is a help, but the use of it is cumber:" or that other of his principles, "That he presuppose that men are not fitly to be wrought otherwise but by fear; and therefore that he seek to have every man obnoxious, low, and in straits," which the Italians call *seminar spine*, to sow thorns: or that other principle, contained in the verse which Cicero citeth, *Cadant amici*, *dummodo inimici intercidant*, as the triumvirs, which sold every one to other the lives of their friends for the deaths of their enemies: or that other protestation of L. Catilina, to set on fire and trouble states, to the end to fish in droumy waters, and to unwrap their fortunes, *Ego si quid in fortunis meis excitatum sit incendium*, *id non aqua sed ruina restinguam*: or that other principle of Lysander, "That children are to be deceived with comfits, and men with oaths:" and the like evil and corrupt positions, whereof (as in all things) there are more in number than of the good: certainly with these dispensations from the laws of charity and integrity, the pressing of a man's fortune may be more hasty and

compendious. But it is in life as it is in ways, the shortest way is commonly the foulest, and surely the fairer way is not much about.

(46) But men, if they be in their own power, and do bear and sustain themselves, and be not carried away with a whirlwind or tempest of ambition, ought in the pursuit of their own fortune to set before their eyes not only that general map of the world, "That all things are vanity and vexation of spirit," but many other more particular cards and directions: chiefly that, that being without well-being is a curse, and the greater being the greater curse; and that all virtue is most rewarded and all wickedness most punished in itself: according as the poet saith excellently: "Quæ vobis, quæ digna, viri pro laudibus istis
Præmia posse rear solvi? pulcherrima primum
Dii *moresque* dabunt vestri."

And so of the contrary. And secondly they ought to look up to the Eternal Providence and Divine Judgment, which often subverteth the wisdom of evil plots and imaginations, according to that scripture, "He hath conceived mischief, and shall bring forth a vain thing." And although men should refrain themselves from injury and evil arts, yet this incessant and Sabbathless pursuit of a man's fortune leaveth not tribute which we owe to God of our time; who (we see) demandeth a tenth of our substance, and a seventh, which is more strict, of our time: and it is to small purpose to have an erected face towards heaven, and a perpetual grovelling spirit upon earth, eating dust as doth the serpent, *Atque affigit humo divinæ particulam auræ*. And if any man flatter himself that he will employ his fortune well, though he should obtain it ill, as was said concerning Augustus Cæsar, and after of Septimius Severus, "That either they should never have been born, or else they should never have died," they did so much mischief in the pursuit and ascent of their greatness, and so much good when they were established; yet these compensations and satisfactions are good to be used, but never good to be purposed. And lastly, it is not amiss for men, in their race towards their fortune, to cool themselves a little with that conceit which is elegantly expressed by the Emperor Charles V., in his instructions to the king his son, "That fortune hath somewhat of the nature of a woman, that if she he too

much wooed she is the farther off." But this last is but a remedy for those whose tastes are corrupted: let men rather build upon that foundation which is as a corner-stone of divinity and philosophy, wherein they join close, namely that same *Primum quærite*. For divinity saith, *Primum quærite regnum Dei*, *et ista omnia adjicientur vobis*: and philosophy saith, *Primum quærite bona animi*; *cætera aut aderunt*, *aut non oberunt*. And although the human foundation hath somewhat of the sands, as we see in M. Brutus, when he broke forth into that speech, "Te colui (Virtus) ut rem; ast tu nomen inane es;"

yet the divine foundation is upon the rock. But this may serve for a taste of that knowledge which I noted as deficient.

(47) Concerning government, it is a part of knowledge secret and retired in both these respects in which things are deemed secret; for some things are secret because they are hard to know, and some because they are not fit to utter. We see all governments are obscure and invisible: "Totamque infusa per artus
Mens agitat molem, et magno se corpore miscet."

Such is the description of governments. We see the government of God over the world is hidden, insomuch as it seemeth to participate of much irregularity and confusion. The government of the soul in moving the body is inward and profound, and the passages thereof hardly to be reduced to demonstration. Again, the wisdom of antiquity (the shadows whereof are in the poets) in the description of torments and pains, next unto the crime of rebellion, which was the giants' offence, doth detest the offence of futility, as in Sisyphus and Tantalus. But this was meant of particulars: nevertheless even unto the general rules and discourses of policy and government there is due a reverent and reserved handling.

(48) But contrariwise in the governors towards the governed, all things ought as far as the frailty of man permitteth to be manifest and revealed. For so it is expressed in the Scriptures touching the government of God, that this globe, which seemeth to us a dark and shady body, is in the view of God as crystal: *Et in conspectu sedis tanquam mare vitreum simile crystallo*. So unto princes and states, and specially towards wise senates and councils, the natures and

dispositions of the people, their conditions and necessities, their factions and combinations, their animosities and discontents, ought to be, in regard of the variety of their intelligences, the wisdom of their observations, and the height of their station where they keep sentinel, in great part clear and transparent. Wherefore, considering that I write to a king that is a master of this science, and is so well assisted, I think it decent to pass over this part in silence, as willing to obtain the certificate which one of the ancient philosophers aspired unto; who being silent, when others contended to make demonstration of their abilities by speech, desired it might be certified for his part, "That there was one that knew how to hold his peace."

(49) Notwithstanding, for the more public part of government, which is laws, I think good to note only one deficiency; which is, that all those which have written of laws have written either as philosophers or as lawyers, and none as statesmen. As for the philosophers, they make imaginary laws for imaginary commonwealths, and their discourses are as the stars, which give little light because they are so high. For the lawyers, they write according to the states where they live what is received law, and not what ought to be law; for the wisdom of a law-maker is one, and of a lawyer is another. For there are in nature certain fountains of justice whence all civil laws are derived but as streams; and like as waters do take tinctures and tastes from the soils through which they run, so do civil laws vary according to the regions and governments where they are planted, though they proceed from the same fountains. Again, the wisdom of a law-maker consisteth not only in a platform of justice, but in the application thereof; taking into consideration by what means laws may be made certain, and what are the causes and remedies of the doubtfulness and uncertainty of law; by what means laws may be made apt and easy to be executed, and what are the impediments and remedies in the execution of laws; what influence laws touching private right of *meum* and *tuum* have into the public state, and how they may be made apt and agreeable; how laws are to be penned and delivered, whether in texts or in Acts, brief or large, with preambles or without; how they are to be pruned and reformed from time to time, and what

is the best means to keep them from being too vast in volume, or too full of multiplicity and crossness; how they are to be expounded, when upon causes emergent and judicially discussed, and when upon responses and conferences touching general points or questions; how they are to be pressed, rigorously or tenderly; how they are to be mitigated by equity and good conscience, and whether discretion and strict law are to be mingled in the same courts, or kept apart in several courts; again, how the practice, profession, and erudition of law is to be censured and governed; and many other points touching the administration and (as I may term it) animation of laws. Upon which I insist the less, because I purpose (if God give me leave), having begun a work of this nature in aphorisms, to propound it hereafter, noting it in the meantime for deficient.

(50) And for your Majesty's laws of England, I could say much of their dignity, and somewhat of their defect; but they cannot but excel the civil laws in fitness for the government, for the civil law was *nonhos quæsitum munus in usus*; it was not made for the countries which it governeth. Hereof I cease to speak because I will not intermingle matter of action with matter of general learning.

XXIV. Thus have I concluded this portion of learning touching civil knowledge; and with civil knowledge have concluded human philosophy; and with human philosophy, philosophy in general. And being now at some pause, looking back into that I have passed through, this writing seemeth to me (*si nunquam fallit imago*), as far as a man can judge of his own work, not much better than that noise or sound which musicians make while they are in tuning their instruments, which is nothing pleasant to hear, but yet is a cause why the music is sweeter afterwards. So have I been content to tune the instruments of the Muses, that they may play that have better hands. And surely, when I set before me the condition of these times, in which learning hath made her third visitation or circuit in all the qualities thereof; as the excellency and vivacity of the wits of this age; the noble helps and lights which we have by the travails of ancient writers; the art of printing, which communicateth books to men of all

fortunes; the openness of the world by navigation, which hath disclosed multitudes of experiments, and a mass of natural history; the leisure wherewith these times abound, not employing men so generally in civil business, as the states of Græcia did, in respect of their popularity, and the state of Rome, in respect of the greatness of their monarchy; the present disposition of these times at this instant to peace; the consumption of all that ever can be said in controversies of religion, which have so much diverted men from other sciences; the perfection of your Majesty's learning, which as a phœnix may call whole volleys of wits to follow you; and the inseparable propriety of time, which is ever more and more to disclose truth; I cannot but be raised to this persuasion, that this third period of time will far surpass that of the Grecian and Roman learning; only if men will know their own strength and their own weakness both; and take, one from the other, light of invention, and not fire of contradiction; and esteem of the inquisition of truth as of an enterprise, and not as of a quality or ornament; and employ wit and magnificence to things of worth and excellency, and not to things vulgar and of popular estimation. As for my labours, if any man shall please himself or others in the reprehension of them, they shall make that ancient and patient request, *Verbera*, *sed audi*: let men reprehend them, so they observe and weigh them. For the appeal is lawful (though it may be it shall not be needful) from the first cogitations of men to their second, and from the nearer times to the times further off. Now let us come to that learning, which both the former times were not so blessed as to know, sacred and inspired divinity, the Sabbath and port of all men's labours and peregrinations.

XXV. (1) The prerogative of God extendeth as well to the reason as to the will of man: so that as we are to obey His law, though we find a reluctation in our will, so we are to believe His word, though we find a reluctation in our reason. For if we believe only that which is agreeable to our sense we give consent to the matter, and not to the author; which is no more than we would do towards a suspected and discredited witness; but that faith which was accounted to Abraham for righteousness was of such a point as whereat Sarah laughed, who therein was an image of natural reason.

(2) Howbeit (if we will truly consider of it) more worthy it is to believe than to know as we now know. For in knowledge man's mind suffereth from sense: but in belief it suffereth from spirit, such one as it holdeth for more authorised than itself and so suffereth from the worthier agent. Otherwise it is of the state of man glorified; for then faith shall cease, and we shall know as we are known.

(3) Wherefore we conclude that sacred theology (which in our idiom we call divinity) is grounded only upon the word and oracle of God, and not upon the light of nature: for it is written, *Cæli enarrant gloriam Dei*; but it is not written, *Cæli enarrant voluntatem Dei*: but of that it is said, *Ad legem et testimonium*: *si non fecerint secundum verbum istud*, &c. This holdeth not only in those points of faith which concern the great mysteries of the Deity, of the creation, of the redemption, but likewise those which concern the law moral, truly interpreted: "Love your enemies: do good to them that hate you; be like to your heavenly Father, that suffereth His rain to fall upon the just and unjust." To this it ought to be applauded, *Nec vox hominem sonat*: it is a voice beyond the light of nature. So we see the heathen poets, when they fall upon a libertine passion, do still expostulate with laws and moralities, as if they were opposite and malignant to nature: *Et quod natura remittit*, *invida jura negant*. So said Dendamis the Indian unto Alexander's messengers, that he had heard somewhat of Pythagoras, and some other of the wise men of Græcia, and that he held them for excellent men: but that they had a fault, which was that they had in too great reverence and veneration a thing they called law and manners. So it must be confessed that a great part of the law moral is of that perfection whereunto the light of nature cannot aspire: how then is it that man is said to have, by the light and law of nature, some notions and conceits of virtue and vice, justice and wrong, good and evil? Thus, because the light of nature is used in two several senses: the one, that which springeth from reason, sense, induction, argument, according to the laws of heaven and earth; the other, that which is imprinted upon the spirit of man by an inward instinct, according to the law of conscience, which is a sparkle of the purity of his first estate: in which latter sense only he is participant of some light and discerning touching the perfection of the moral law; but how?

sufficient to check the vice but not to inform the duty. So then the doctrine of religion, as well moral as mystical, is not to be attained but by inspiration and revelation from God.

(4) The use notwithstanding of reason in spiritual things, and the latitude thereof, is very great and general: for it is not for nothing that the apostle calleth religion "our reasonable service of God;" insomuch as the very ceremonies and figures of the old law were full of reason and signification, much more than the ceremonies of idolatry and magic, that are full of non-significants and surd characters. But most specially the Christian faith, as in all things so in this, deserveth to be highly magnified; holding and preserving the golden mediocrity in this point between the law of the heathen and the law of Mahomet, which have embraced the two extremes. For the religion of the heathen had no constant belief or confession, but left all to the liberty of agent; and the religion of Mahomet on the other side interdicteth argument altogether: the one having the very face of error, and the other of imposture; whereas the Faith doth both admit and reject disputation with difference.

(5) The use of human reason in religion is of two sorts: the former, in the conception and apprehension of the mysteries of God to us revealed; the other, in the inferring and deriving of doctrine and direction thereupon. The former extendeth to the mysteries themselves; but how? by way of illustration, and not by way of argument. The latter consisteth indeed of probation and argument. In the former we see God vouchsafeth to descend to our capacity, in the expressing of His mysteries in sort as may be sensible unto us; and doth graft His revelations and holy doctrine upon the notions of our reason, and applieth His inspirations to open our understanding, as the form of the key to the ward of the lock. For the latter there is allowed us a use of reason and argument, secondary and respective, although not original and absolute. For after the articles and principles of religion are placed and exempted from examination of reason, it is then permitted unto us to make derivations and inferences from and according to the analogy of them, for our better direction. In nature this holdeth not; for both the principles are examinable by induction, though not by a medium or

syllogism; and besides, those principles or first positions have no discordance with that reason which draweth down and deduceth the inferior positions. But yet it holdeth not in religion alone, but in many knowledges, both of greater and smaller nature, namely, wherein there are not only *posita* but *placita*; for in such there can be no use of absolute reason. We see it familiarly in games of wit, as chess, or the like. The draughts and first laws of the game are positive, but how? merely *ad placitum*, and not examinable by reason; but then how to direct our play thereupon with best advantage to win the game is artificial and rational. So in human laws there be many grounds and maxims which are *placita juris*, positive upon authority, and not upon reason, and therefore not to be disputed: but what is most just, not absolutely but relatively, and according to those maxims, that affordeth a long field of disputation. Such therefore is that secondary reason, which hath place in divinity, which is grounded upon the *placets* of God.

(6) Here therefore I note this deficiency, that there hath not been, to my understanding, sufficiently inquired and handled the true limits and use of reason in spiritual things, as a kind of divine dialectic: which for that it is not done, it seemeth to me a thing usual, by pretext of true conceiving that which is revealed, to search and mine into that which is not revealed; and by pretext of enucleating inferences and contradictories, to examine that which is positive. The one sort falling into the error of Nicodemus, demanding to have things made more sensible than it pleaseth God to reveal them, *Quomodo possit homo nasci cum sit senex*? The other sort into the error of the disciples, which were scandalised at a show of contradiction, *Quid est hoc quod dicit nobis*? *Modicum et non videbitis me*; *et iterum*, *modicum*, *et videbitis me*, &c.

(7) Upon this I have insisted the more, in regard of the great and blessed use thereof; for this point well laboured and defined of would in my judgment be an opiate to stay and bridle not only the vanity of curious speculations, wherewith the schools labour, but the fury of controversies, wherewith the Church laboureth. For it cannot but open men's eyes to see that many controversies do merely pertain to that which is either not revealed or positive; and that many

others do grow upon weak and obscure inferences or derivations: which latter sort, if men would revive the blessed style of that great doctor of the Gentiles, would be carried thus, *ego*, *non dominus*; and again, *secundum consilium meum*, in opinions and counsels, and not in positions and oppositions. But men are now over-ready to usurp the style, *non ego*, *sed dominus*; and not so only, but to bind it with the thunder and denunciation of curses and anathemas, to the terror of those which have not sufficiently learned out of Solomon that "The causeless curse shall not come."

(8) Divinity hath two principal parts: the matter informed or revealed, and the nature of the information or revelation; and with the latter we will begin, because it hath most coherence with that which we have now last handled. The nature of the information consisteth of three branches: the limits of the information, the sufficiency of the information, and the acquiring or obtaining the information. Unto the limits of the information belong these considerations: how far forth particular persons continue to be inspired; how far forth the Church is inspired; and how far forth reason may be used; the last point whereof I have noted as deficient. Unto the sufficiency of the information belong two considerations: what points of religion are fundamental, and what perfective, being matter of further building and perfection upon one and the same foundation; and again, how the gradations of light according to the dispensation of times are material to the sufficiency of belief.

(9) Here again I may rather give it in advice than note it as deficient, that the points fundamental, and the points of further perfection only, ought to be with piety and wisdom distinguished; a subject tending to much like end as that I noted before; for as that other were likely to abate the number of controversies, so this is likely to abate the heat of many of them. We see Moses when he saw the Israelite and the Egyptian fight, he did not say, "Why strive you?" but drew his sword and slew the Egyptian; but when he saw the two Israelites fight, he said, "You are brethren, why strive you?" If the point of doctrine be an Egyptian, it must be slain by the sword of the Spirit, and not reconciled; but if it be an Israelite, though in the wrong, then, "Why strive you?" We see of the

fundamental points, our Saviour penneth the league thus, “He that is not with us is against us;” but of points not fundamental, thus, “He that is not against us is with us.” So we see the coat of our Saviour was entire without seam, and so is the doctrine of the Scriptures in itself; but the garment of the Church was of divers colours and yet not divided. We see the chaff may and ought to be severed from the corn in the ear, but the tares may not be pulled up from the corn in the field. So as it is a thing of great use well to define what, and of what latitude, those points are which do make men mere aliens and disincorporate from the Church of God.

(10) For the obtaining of the information, it resteth upon the true and sound interpretation of the Scriptures, which are the fountains of the water of life. The interpretations of the Scriptures are of two sorts: methodical, and solute or at large. For this divine water, which excelleth so much that of Jacob’s well, is drawn forth much in the same kind as natural water useth to be out of wells and fountains; either it is first forced up into a cistern, and from thence fetched and derived for use; or else it is drawn and received in buckets and vessels immediately where it springeth. The former sort whereof, though it seem to be the more ready, yet in my judgment is more subject to corrupt. This is that method which hath exhibited unto us the scholastical divinity; whereby divinity hath been reduced into an art, as into a cistern, and the streams of doctrine or positions fetched and derived from thence.

(11) In this men have sought three things, a summary brevity, a compacted strength, and a complete perfection; whereof the two first they fail to find, and the last they ought not to seek. For as to brevity, we see in all summary methods, while men purpose to abridge, they give cause to dilate. For the sum or abridgment by contraction becometh obscure; the obscurity requireth exposition, and the exposition is deduced into large commentaries, or into commonplaces and titles, which grow to be more vast than the original writings, whence the sum was at first extracted. So we see the volumes of the schoolmen are greater much than the first writings of the fathers, whence the master of the sentences made his sum or collection. So in like manner the volumes of the

modern doctors of the civil law exceed those of the ancient jurisconsults, of which Tribonian compiled the digest. So as this course of sums and commentaries is that which doth infallibly make the body of sciences more immense in quantity, and more base in substance.

(12) And for strength, it is true that knowledges reduced into exact methods have a show of strength, in that each part seemeth to support and sustain the other; but this is more satisfactory than substantial, like unto buildings which stand by architecture and compaction, which are more subject to ruin than those that are built more strong in their several parts, though less compacted. But it is plain that the more you recede from your grounds, the weaker do you conclude; and as in nature, the more you remove yourself from particulars, the greater peril of error you do incur; so much more in divinity, the more you recede from the Scriptures by inferences and consequences, the more weak and dilute are your positions.

(13) And as for perfection or completeness in divinity, it is not to be sought, which makes this course of artificial divinity the more suspect. For he that will reduce a knowledge into an art will make it round and uniform; but in divinity many things must be left abrupt, and concluded with this: *O altitudo sapientiæ et scientiæ Dei*! *quam incomprehensibilia sunt juducua ejus*, *et non investigabiles viæ ejus*. So again the apostle saith, *Ex parte scimus*: and to have the form of a total, where there is but matter for a part, cannot be without supplies by supposition and presumption. And therefore I conclude that the true use of these sums and methods hath place in institutions or introductions preparatory unto knowledge; but in them, or by deducement from them, to handle the main body and substance of a knowledge is in all sciences prejudicial, and in divinity dangerous.

(14) As to the interpretation of the Scriptures solute and at large, there have been divers kinds introduced and devised; some of them rather curious and unsafe than sober and warranted. Notwithstanding, thus much must be confessed, that the Scriptures, being given by inspiration and not by human reason, do differ from all other books in the Author, which by consequence doth

draw on some difference to be used by the expositor. For the Inditer of them did know four things which no man attains to know; which are — the mysteries of the kingdom of glory, the perfection of the laws of nature, the secrets of the heart of man, and the future succession of all ages. For as to the first it is said, "He that presseth into the light shall be oppressed of the glory." And again, "No man shall see My face and live." To the second, "When He prepared the heavens I was present, when by law and compass He enclosed the deep." To the third, "Neither was it needful that any should bear witness to Him of man, for He knew well what was in man." And to the last, "From the beginning are known to the Lord all His works."

(15) From the former two of these have been drawn certain senses and expositions of Scriptures, which had need be contained within the bounds of sobriety — the one anagogical, and the other philosophical. But as to the former, man is not to prevent his time: *Videmus nunc per speculum in ænigmate*, *tunc autem facie ad faciem*; wherein nevertheless there seemeth to be a liberty granted, as far forth as the polishing of this glass, or some moderate explication of this enigma. But to press too far into it cannot but cause a dissolution and overthrow of the spirit of man. For in the body there are three degrees of that we receive into it — aliment, medicine, and poison; whereof aliment is that which the nature of man can perfectly alter and overcome; medicine is that which is partly converted by nature, and partly converteth nature; and poison is that which worketh wholly upon nature, without that nature can in any part work upon it. So in the mind, whatsoever knowledge reason cannot at all work upon and convert is a mere intoxication, and endangereth a dissolution of the mind and understanding.

(16) But for the latter, it hath been extremely set on foot of late time by the school of Paracelsus, and some others, that have pretended to find the truth of all natural philosophy in the Scriptures; scandalising and traducing all other philosophy as heathenish and profane. But there is no such enmity between God's Word and His works; neither do they give honour to the Scriptures, as they suppose, but much embase them. For to seek heaven and earth in the Word

of God, whereof it is said, “Heaven and earth shall pass, but My word shall not pass,” is to seek temporary things amongst eternal: and as to seek divinity in philosophy is to seek the living amongst the dead, so to seek philosophy in divinity is to seek the dead amongst the living: neither are the pots or lavers, whose place was in the outward part of the temple, to be sought in the holiest place of all where the ark of the testimony was seated. And again, the scope or purpose of the Spirit of God is not to express matters of nature in the Scriptures, otherwise than in passage, and for application to man’s capacity and to matters moral or divine. And it is a true rule, *Auctoris aliud agentis parva auctoritas*. For it were a strange conclusion, if a man should use a similitude for ornament or illustration sake, borrowed from nature or history according to vulgar conceit, as of a basilisk, a unicorn, a centaur, a Briareus, a hydra, or the like, that therefore he must needs be thought to affirm the matter thereof positively to be true. To conclude therefore these two interpretations, the one by reduction or enigmatical, the other philosophical or physical, which have been received and pursued in imitation of the rabbins and cabalists, are to be confined with a *a noli akryn sapere*, *sed time*.

(17) But the two latter points, known to God and unknown to man, touching the secrets of the heart and the successions of time, doth make a just and sound difference between the manner of the exposition of the Scriptures and all other books. For it is an excellent observation which hath been made upon the answers of our Saviour Christ to many of the questions which were propounded to Him, how that they are impertinent to the state of the question demanded: the reason whereof is, because not being like man, which knows man’s thoughts by his words, but knowing man’s thoughts immediately, He never answered their words, but their thoughts. Much in the like manner it is with the Scriptures, which being written to the thoughts of men, and to the succession of all ages, with a foresight of all heresies, contradictions, differing estates of the Church, yea, and particularly of the elect, are not to be interpreted only according to the latitude of the proper sense of the place, and respectively towards that present occasion whereupon the words were uttered, or in precise congruity or

contexture with the words before or after, or in contemplation of the principal scope of the place; but have in themselves, not only totally or collectively, but distributively in clauses and words, infinite springs and streams of doctrine to water the Church in every part. And therefore as the literal sense is, as it were, the main stream or river, so the moral sense chiefly, and sometimes the allegorical or typical, are they whereof the Church hath most use; not that I wish men to be bold in allegories, or indulgent or light in allusions: but that I do much condemn that interpretation of the Scripture which is only after the manner as men use to interpret a profane book.

(18) In this part touching the exposition of the Scriptures, I can report no deficiency; but by way of remembrance this I will add. In perusing books of divinity I find many books of controversies, and many of commonplaces and treatises, a mass of positive divinity, as it is made an art: a number of sermons and lectures, and many prolix commentaries upon the Scriptures, with harmonies and concordances. But that form of writing in divinity which in my judgment is of all others most rich and precious is positive divinity, collected upon particular texts of Scriptures in brief observations; not dilated into commonplaces, not chasing after controversies, not reduced into method of art; a thing abounding in sermons, which will vanish, but defective in books which will remain, and a thing wherein this age excelleth. For I am persuaded, and I may speak it with an *absit invidia verbo*, and nowise in derogation of antiquity, but as in a good emulation between the vine and the olive, that if the choice and best of those observations upon texts of Scriptures which have been made dispersedly in sermons within this your Majesty's Island of Brittany by the space of these forty years and more (leaving out the largeness of exhortations and applications thereupon) had been set down in a continuance, it had been the best work in divinity which had been written since the Apostles' times.

(19) The matter informed by divinity is of two kinds: matter of belief and truth of opinion, and matter of service and adoration; which is also judged and directed by the former — the one being as the internal soul of religion, and the other as the external body thereof. And, therefore, the heathen religion was not

only a worship of idols, but the whole religion was an idol in itself; for it had no soul; that is, no certainty of belief or confession: as a man may well think, considering the chief doctors of their church were the poets; and the reason was because the heathen gods were no jealous gods, but were glad to be admitted into part, as they had reason. Neither did they respect the pureness of heart, so they might have external honour and rites.

(20) But out of these two do result and issue four main branches of divinity: faith, manners, liturgy, and government. Faith containeth the doctrine of the nature of God, of the attributes of God, and of the works of God. The nature of God consisteth of three persons in unity of Godhead. The attributes of God are either common to the Deity, or respective to the persons. The works of God summary are two, that of the creation and that of the redemption; and both these works, as in total they appertain to the unity of the Godhead, so in their parts they refer to the three persons: that of the creation, in the mass of the matter, to the Father; in the disposition of the form, to the Son; and in the continuance and conservation of the being, to the Holy Spirit. So that of the redemption, in the election and counsel, to the Father; in the whole act and consummation, to the Son; and in the application, to the Holy Spirit; for by the Holy Ghost was Christ conceived in flesh, and by the Holy Ghost are the elect regenerate in spirit. This work likewise we consider either effectually, in the elect; or privately, in the reprobate; or according to appearance, in the visible Church.

(21) For manners, the doctrine thereof is contained in the law, which discloseth sin. The law itself is divided, according to the edition thereof, into the law of nature, the law moral, and the law positive; and according to the style, into negative and affirmative, prohibitions and commandments. Sin, in the matter and subject thereof, is divided according to the commandments; in the form thereof it referreth to the three persons in Deity: sins of infirmity against the Father, whose more special attribute is power; sins of ignorance against the Son, whose attribute is wisdom; and sins of malice against the Holy Ghost, whose attribute is grace or love. In the motions of it, it either moveth to the right hand or to the left; either to blind devotion or to profane and libertine

transgression; either in imposing restraint where God granteth liberty, or in taking liberty where God imposeth restraint. In the degrees and progress of it, it divideth itself into thought, word, or act. And in this part I commend much the deducing of the law of God to cases of conscience; for that I take indeed to be a breaking, and not exhibiting whole of the bread of life. But that which quickeneth both these doctrines of faith and manners is the elevation and consent of the heart; whereunto appertain books of exhortation, holy meditation, Christian resolution, and the like.

(22) For the liturgy or service, it consisteth of the reciprocal acts between God and man; which, on the part of God, are the preaching of the word, and the sacraments, which are seals to the covenant, or as the visible word; and on the part of man, invocation of the name of God; and under the law, sacrifices; which were as visible prayers or confessions: but now the adoration being *in spiritu et veritate*, there remaineth only *vituli labiorum*; although the use of holy vows of thankfulness and retribution may be accounted also as sealed petitions.

(23) And for the government of the Church, it consisteth of the patrimony of the Church, the franchises of the Church, and the offices and jurisdictions of the Church, and the laws of the Church directing the whole; all which have two considerations, the one in themselves, the other how they stand compatible and agreeable to the civil estate.

(24) This matter of divinity is handled either in form of instruction of truth, or in form of confutation of falsehood. The declinations from religion, besides the privative, which is atheism and the branches thereof, are three — heresies, idolatry, and witchcraft: heresies, when we serve the true God with a false worship; idolatry, when we worship false gods, supposing them to be true; and witchcraft, when we adore false gods, knowing them to be wicked and false. For so your Majesty doth excellently well observe, that witchcraft is the height of idolatry. And yet we see though these be true degrees, Samuel teacheth us that they are all of a nature, when there is once a receding from the Word of God; for so he saith, *Quasi peccatum ariolandi est repugnare*, *et quasi scelus idololatriæ nolle acquiescere*.

(25) These things I have passed over so briefly because I can report no deficiency concerning them: for I can find no space or ground that lieth vacant and unsown in the matter of divinity, so diligent have men been either in sowing of good seed, or in sowing of tares.

Thus have I made as it were a small globe of the intellectual world, as truly and faithfully as I could discover; with a note and description of those parts which seem to me not constantly occupate, or not well converted by the labour of man. In which, if I have in any point receded from that which is commonly received, it hath been with a purpose of proceeding in *melius*, and not *in aliud*; a mind of amendment and proficiency, and not of change and difference. For I could not be true and constant to the argument I handle if I were not willing to go beyond others; but yet not more willing than to have others go beyond me again: which may the better appear by this, that I have propounded my opinions naked and unarmed, not seeking to preoccupate the liberty of men's judgments by confutations. For in anything which is well set down, I am in good hope that if the first reading move an objection, the second reading will make an answer. And in those things wherein I have erred, I am sure I have not prejudiced the right by litigious arguments; which certainly have this contrary effect and operation, that they add authority to error, and destroy the authority of that which is well invented. For question is an honour and preferment to falsehood, as on the other side it is a repulse to truth. But the errors I claim and challenge to myself as mine own. The good, it any be, is due *tanquam adeps sacrificii*, to be incensed to the honour, first of the Divine Majesty, and next of your Majesty, to whom on earth I am most bounden.

In Felicem Memoriam Elizabethae

OR IN HAPPY MEMORY OF QUEEN ELIZABETH

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TO THE READER.
THE FELICITY OF QUEEN ELIZABETH: WRIT, BY SIR FRANCIS BACON.

TO THE READER.

Reader,

HERE is presented to thy view certain Tracts, containing divers Arcana Imperii; by two in their times eminent Councellors of Estate.

The one is the Felicity of Queen ELIZABETH, and her Times, by that Noble and learned Gentleman, the Lord BACON, Viscount St. Alban; one of the standing Honors of the Law in general, and of Grayes Inn in particular.

The other is the Advices to Queen ELIZABETH, by that well weigh'd States-man the Lord BURLIEGH, then Lord Treasurer, a man beyond expression excellent, whom it much availed Queen Elizabeth to have for Minister, as appears by that Favour shewed to him, the Queen alwaies making him to sit in the presence (by reason of the Gout in his Feet) and telling him, My Lord, We make much of you, not for your bad Legs, but for your good Head.

And as for the Lord Bacon, (certain of whose Epistles are annexed to this book) if it were expected, we must heap up abundantTestimonies; We will select some few out of many, omitting the for-rain of Mersennus, and Mr. Pierre D'Amboise, and others, who have Translated and Commented upon him, and confine our selves to those worthy men that are of our own Nation; and begin with the Testimony of Sir Hennry Wotton.

The Lord Bacon hath done a great and everliving Benefit to the Children of Nature, and to Nature her self, in her uttermost Latitude and Extent, who never before had so Noble and True an Interpreter; (and as I am ready to stile his Lordship) never so inward a Secretary of her Majesties Cabinet; and he did determine to have his Lordships work of Novum Organon, read, peice by piece, at certain hours in his Domestick Colledge, (Eaton) as an Ancient Author.

Mr. George Sands, in his Coment on Ovid, professes himself to be much assisted by our Author, whom he calls, The Crown of the latter Age, the Lord Viscount St. ALBAN.

Mr. Howel, in his Vocal Forest, of him thus — The Flexanimous and Golden Tongued Orator, and Chancellor of the Kings Conscience.

The Prefacer to Lessius Hygiasticon:

The Lo. Bacon, the great Lo. Chancellor, of Learning, aswell as Law.

Dr. Gilbert Watts: The L. Bacon, a learned man, happily, the learnedst that ever lived since the decay of the Grecian and Roman Empires, when learning was at an high pitch.

Aud for a further testimony, we refer you to those Copious and Elegant Verses, made by M. Geo. Herbert, somtime Orator of the University of Cambridg, upon this Author, and lately Printed in a Book, called, Herberts Remains.

THE FELICITY OF QUEEN ELIZABETH: WRIT, BY SIR FRANCIS BACON.

QUEEN Elizabeth in regard both of Nature and Fortune, the Pattern of Princes, and wonder of her Sex, of whose vertues and glories thereof Monks that live in the shade of Cloysters, tart in stile, loose in judgment, and not forgetful of themselves, would be no sufficient avowchers; this testimony belongs to men of note, such as have stood at the helm of State, and been acquainted with the depth and tydes of Civil affairs: In all Antiquity the rule of a woman hath been very rare, in that rule the Felicity rarer, and the continuance of that Felicity rarest of all; yet this Lady raigned full four and fourty years, and overlived not her Felicity; of which happiness I purpose to speak a little without running into praises, for praises are given by men, but happiness is the gift of God.

I say the first stept of her Felicity, in that she was raised to the top of all from a private fortune, for customarily so run the opinions of men, to esteem that most happy, which happeneth most beyond hope and expectation. But this is not all I mean, my aim reacheth further, that Princes brought up in Regal houses, to hope of succession not uncertain, are often depraved with soft and licentious breeding, and become immoderate in their raign. From hence we finde the best and most excellent Kings were taught in Schooles of either fortune, such as with us was Henry the seventh, and Lewis the twelfth among the French, both of which about the same time (as the memory yet remaineth) obtained a Kingdom, not from privacy only, but onely from adversity, whereof the latter flourished in justice, and the former in wisdom. Like to theirs was the condition of this Prince, whose hopes and beginnings Fortune brauled, but was thence forward constant to her till her ending.

For first, By birth she had her turn by succession, then she was disinherited, and at last laid aside, and forgotten; in the raign of her brother her fortune was propitious and fair, which in her Sisters grew dark and dangerous: But yet she was not suddenly taken from prison to the Crown, least that fret of remembrance

might perhaps make her swell, but being first restored to liberty, she afterwards obtained her claim without stir or competition, of whom God intending to make so rare a Prince, it seemeth he prepared her mind, and made her ascend by the steps of her discipline to the Crown of her own inheritance: neither ought the calamity of her mother blast the dignity of her birth, especially it being certain, that Henry the eight was rather led with love towards another, then indignation against her: The nature of which King, light in his loves, apt to suspition, and in them hasty to blood, cannot avoid the note of posterity. As for the accusations made against her person in themselves improbable, and leaning upon slight conjectures, they were not onely detested by the silent murmurers of those times, but by Queen Anne her self in that memorable and heroical speech which she used at the instant of her death; whereas preparing her self to leave this world, and having gotten as she thought a loving and trusty messenger, she bids him deliver this message to the King, that well she saw his Majesty would not give over his old wont in heaping new honours upon her: First, from a Gentlewoman he had made her a Marquess, from thence his consort and a Queen, and now finding no higher pitch of honour upon the earth, he was pleased to advance her in her innocency to the Crown of Martyrdom; which though that messenger durst not relate to the King burning in new desires, yet Fame (preserver of truth) hath kept it safe for after ages.

Moreover, I put no small part of her Felicity in the measure and compass of her raign, not so much for being long, as beeause it took up that space of age, which is most fit to hold the raynes of publick government, for at five and twenty yeers (when tuition beginneth to cease) she began and raigned till threescore, and whereby she neither felt the wrongs of a pupil under anothers arbitration, nor yet the inconveniences of an old decrepit age, private men feel miseries enough in old age; but usually it bringeth to Princes (besides those common griefs) ends void of glory, and diminution of estate, few attaining an old and unwealdy age without some loss of reputation and state. Take one example in Philip the second King of Spain, a most puissant Prince, and coming in swaying a Kingdom, who in his latter daies feeling the burthen and feebleness

of age, helped weakness with wisedom, submitting himself to the course of mortal things; thereupon he restored such places as had been won in, there he established a Peace, and attempted the same elsewhere; that his affairs being all compounded he might leavethem intire and illetigious to his heirs. The contrary in all things hapned to Q. Elizabeth to whom fortune was so firm, that she never suffered in flourishing or declining yeers any declination. And to seal up her rare Felicity, she departed not this world till the Rebellions in Ireland were decided by stroke of an happy battail, that there might be no blemish nor imperfection in her glory.

That is not also to be forgotten what kinde of People she governed; had she raigned in Palmgrevis, or over the milk sops of Asia, it would have been no marvel that a female Prince should command effeminate Nations: But that in England, so Warlike and stout a People should stir and stop at the beck of a woman, cannot be without great admiration; yet, for all this inclination of her people longing for war, & of their rest impatient, she was never hindred from loving and keeping of peace, which will of hers was seconded with success, I reckon among her chiefest praises, for it not onely became her sex, and eased her age, but was certainly a great comfort to her conscience; indeed about the tenth of her raign some tumults were attempted in the North, but they were quickly quenched, and she enjoyed ever after deep peace and security: which inward peace of her times, I judge was most glorious for two respects; the one that it shone the better by the flames and combustions of her neighbours; the other that notwithstanding the easiness of Peace, Armes wanted not their honour; whereby the prowess of the English Name was not onely kept up, but increased; hence many supplies were sent into Scotland, France, and the Netherlands, divers expeditions by Sea into the Indies, some wherof gave the world a girdle, Fleets were rigged to infest the Coasts of Spain and Portugal. The Rebels in Ireland were often tamed and suppressed, so that she took a special care, that neither the courage of the people should rest, nor their fame suffer any diminution.

To this glory the weight of desert was added; for by her reasonable reliefs neighbouring Princes were preserved in the Kingdom; and afflicted people

(exposed by their Lords, badly counselled to the cruelty of their Ministers, and devoted to the Shambles) received petition in their miseries, whereof they feel the benefit at this day.

In her councels she was no less kinde and helpful then in her supplies, whereby she perswaded the King of Spain to asswage his anger towards his subjects of the Netherlands, & reduce them to obedience upon tollerable terms, and often solicited the Kings of France to keep their faith, by not infringing the edicts granted to publick peace; in the first whereof, she had regard to the state of Europe in general, lest the boundless ambition of Spain once broken out should fuse it self over the Christian world, and endanger the common liberty. In the second she had compassion of so many innocents that suffered fire and sword with their wives and children; among whom the scum of the people armed and animated with publick power, were let loose like wild beasts to devour them, whose blood called for vengeance, and expiation upon that Kingdom which had made a league to commit inhumane murders and savage Laniations; in both which she omitted not do the office of a kinde, wise, and considerate Prince.

There is yet another cause which maketh the piece of her raign more admirable, namely, that it proceeded from her own wisedom and contriving against the disposition of the times; for if we consider her kingdom either cut into factions at home by difference of religion, or abroad standing as the strength and bulwork of Christendom against the monstrous designs and overflowing power of Spain, we shall finde that there was no fuel wanting for a war, but she had provided for all, and gotten the reach both in Force and Councel; as that memorable event well declared, which for the happiness thereof surpassed all the actions of our age; for when that Navy called Invincible, whose sailes swelled with pride, and secure of victory, had entered the narrow Seas, to the fear and astonishment of Europe; it neither took a cock-boat at Sea, nor burnt a Cottage at Land, nor once touched upon the Coasts; but was miserably scattered and put to flight, and at last dashed upon against the Rocks, whist peace remained in her confines, and no commotion was seen in the Land.

No less happy was she in escaping the plot of Traytors, then defeating the power of her enemies, for though divers conspiracies were hatched against her life, yet all were either discovered or failed, neither did they work any jealousies or distrust in her mind, for she kept not the more within, nor went the less abroad, nor increased the number of her guard, but secure and confident, and mindful more of her deliverance from danger, then of the danger it self, she changed nothing from the wonted course of her life.

It is not also unworthy to be marked the quality of those times wherein she flourished, for some ages fall out to be so barbarous and silly, that it were no harder matter to rule a Nation of men, then to lead a flock of sheep, but she was eminent in learned and refined times, wherein it was not easie to excel without singular parts of Nature, habituation of Vertue, and extraordinary indowments of Wit and Temper.

Besides, the raign of Women use to be obscured with marriage, whose worth and actions are commonly smothered up under the names and covert of their husbands: Those onely that live unmarried have no partner in their glory, such was she, and this praise she deserved the more, because she was supported by no props but her own; no half brother, nor uncle, nor Prince of the blood was remaining to whom she might impart her cares, and receive assistance in her governing; yea, those who she advanced to highest honours, she kept in such a ballance and restraint, that every one laboured most to please her will, whilst she remained mistris of her self.

Barren indeed she was, left no child behind her, which also happened to many fortunate Princes, Alexander the great, Julius Caesar, and Trojaen the Emperor; but this may be a diverse construction, and be disputed on either part, some call it diminishment of happiness, as if those men were blessed above the conditions of men, who prove aswel happy in their propagation as in themselves.

Others make it the pitch of happiness, which, say they, is then onely compleat, when it is exempted from the wheel of fortune, and out of danger to be blemished by a degenerating issue.

She wanted not also those outward adjuncts of happiness, she was tall of stature, of comely limbs and excellent feature in her countenance, Majesty sate under the vail of sweetness, her health was sound and prosperous, and so drawing to her last without sense of age or misfortune, she had that which Augustus so much desired, a gentle and happy departure. The which is likewise recorded of Antonius Pius that good Emperor, whose death was like a dream or some sweet imagination: In all her sickness was nothing ominous, nor lamentable, nor uncouth to her kind, no Symptom was seen strange or noisome, but all of such a frame, as rather shewed the frailty of the corruption of humane nature; for some few daies before her death finding her body (seldom moistened with wine, or a larger diet) to shrink up with driness and cares which attend a crown, she suffered some convulsion in her nerves, still keeping (though in a slow and weaker measure) her speech, motion and understanding, which is not ordinary in that disease: But this estate not long abiding, seeming rather the first steps to death, then last act of life; for when the powers of life are wasted, it is a wretched thing to remain in life; but by the slumber of sense to haste insensibly to death, is a clement and easie close of life.

Add this to the hap of her felicity, that she was not onely happy in her own, but also in the abilities of her servants; for she had such gifted men about her as perhaps this Island had rarely brought forth before.

But God when he favoureth Kings enlargeth the hearts of their ministers.

Two felicities yet remain that may be called Post humus, which are indeed higher and happier then all these that adorned her life: One of her successor, the other of her memory; such a successor she had, who albeit in regard of his masculine vertue and fair progeny, and access of a new Kingdom, might somwhat shadow or exceed her glory, yet he alwayes honoured her name, and gave a kinde of perpetuity to her deeds, for he made so small alteration in the orders he found established, or persons she had chosen, that so the son could succeed his father with greater silence, or less danger or disturbance of estate.

And concerning the fame and happiness of her memory, that is yet so fresh in the mindes and mouths of men, as taking life from her ashes wherein all envy is

raked up; it seemeth to contend with the happiness of her life, for if any factious humor raised from dissent in Religion be yet buzzing abroad (though it seems by this time conjured down by consent of truth) as it is most foul and false; so it cannot be long lived, and truly I have gathered these notes of Gods favour and her felicity for this special end; that malicious men should be afraid to mingle their cursings (amongst so many blessings of God.)

After all this, if any should say as one did of Caesar, We hear of things whereat we wonder, but look for things which we might commend; I verily think that true admiration is certain excess of praise, and verily these felicities here described, cannot befal to any who are not visibly sustained with divine favours, and in some sort have not set their lives in aim of glory; nevertheless, I will recount some few things concerning her manners, and of those onely which might seem to lend occasion unto base speeches of contumelious men.

In her religion she was pious, constant, moderate, and could not away with innovations, her piety chiefly appeared in her works and actions, but it was also seen in the ordinary course, and conversation of her life; she was seldom absent from prayers in her closet, or at sermons and solemn service abroad; diligent in reading the Scriptures, well versed in the Fathers, and above all in St. Augustine; upon divers occasions she composed sundry prayers: when she mentioned God (though in common talk) added for the most part of Creator, casting, as I have often observed, her face & eies into a reverend form of humility: and whereat some have published, that she put off the thought of mortality, nor could abide to hear of old age or death. It is most untrue, for many years before her end she was not nice, often, and with much grace to call her self old woman, and used to discourse of her Tomb, and what inscription would most please her, saying, She delighted not in long Titles, or shadows of glory, a line or two would be enough for her memory, which in few words should only express her name in her virginity, the time of her raign, the restoring of religion, & establishment of Peace: True it is, that being once importuned to declare her successor whilst she was yet in her full strength, not unfit to bear children, she would not endure her winding sheet to be spread before her eies, and yet not long before her death,

sitting pensive, and, as it were, musing of mortality, as one came and told her, that divers places stood too long vacant in the State; she rose up somwhat offended, and said, She knew well enough that her place would not stand an instant empty. Her moderation may perchance be doubted in matter of Religion, considering the severity of those Lawes she made against the Papists: But herein we will produce such onely things whereof we have certain knowledge, and made diligent search; out of all question, the meaning of this Princess minde, was this, neither to offer violence to the consciences of men, nor to suffer her State to be disquieted under pretext of conscience; out of which foundation she judged, first of all, that the toleration of two Religions in one hot heartburning people, who from differenc in mind) might break out into blows, might be of pernitious consequence to the State; thereupon at her entrance upon the Crown, when all things were ful of suspition, she used the power of the Law, and committed som of the busiest, and most factious Prelates for the rest of their Coat: so far was she from vexing them with severe inquisitions, that she winked at their faults, and took them into her protection; This was the first state of things: and although the interdiction of Pius the fift might have stirred up her anger, and made her resolve of a sharper course, yet she departed not from her nature, and changed little from her mildness; for, like a most wise and heroical Lady, secure of her peoples love, and that the Popish Faction could not stir at home without far assistance, she passed little for the claps of the Popes thunder: But about the three and twentieth of her raign things received an alteration, which change of time, was not complotted by design, but recorded in publick Acts, and cut as it were, in brass for perpetuity; Till that year, no great or heavy punishment was laid upon her Popish Subjects by the Lawes precedent; but now the vast projects and ambitions of Spain for subduing of this Kingdom, began to be detected, whereof a principal part was, that a new fangled Faction should be raised in the bowels of this State; which should not onely be ready to receive a forraign invader, but also, (under pretence of the Roman Religion, and power of the Popes Bull,) should absolve her Subjects from their Faith and Allegiance, and prepare their Spirits for dangerous innovasions. About that time Ireland was

assaulted with open Armes, scandalous Libels were cast out against the fame, and government, and the Queen; and all things seemed to swell up in presage of greater motions. I would rather think, that many of the Preists were made wicked instruments of other mens malice, then that all were privy to their Councel; yet this is true, and verified by sundry confessions, That almost all the Priests that were sent over into this Kingdom, from the three and twentieth to the thirtieth of this Queens raign (in which year that Popish and Spanish design was put in execution) had private instructions to divulge abroad, that this Estate could stand thus no longer; that within a while they should see a new face of things, and notable alterations; That the good of England was cared for by the Pope, and popish Princes, if they would not be wanting to themselves; yea, some of the Priests were manifestly found guilty of those Plots and Machinations, which tended to the subversion of the State. And that which moved most the carriage of their secret Councels, was disclosed by letters intercepted, importing, that all the watchfulness of the Queen and Councel over the Papists, would be utterly deluded; for, albeit they laboured much, that no man of note or nobility should be head of the Faction; yet, a course was taken to effect the work by men of meaner and inferiour rancks, whose mindes (though they knew not one another) should be linked together by secret confessions, without need of Assembly.

Such arts were then used, and, of late in a case (not unlike) resumed; which (it seems) are familiar with those men: Thus clangor approaching, like a storme, put a Law of necessity upon the Queen.

It being now high time, that such part of her subjects as were estranged from her love, impoisoned without hope of cure, and yet grew rich withall in a private life, which freed them from publick charge, should be kept under and restrained with Lawes of a more heavy nature: The course of all this misery still increasing, was imputed to the Priests, who carried into forraign Countries, and fed by the crums of stranger Princes (professed enemies to this State) were brought up onely in such places where the name of the Queen their Soveraign was never heard of, but as an heretick and excommunicate person, torn with curses and excommunications; If these men were not inticed with treacherous designes,

they were surely known to be familiar with such as were; who with the venom of their arts, had pernitiously depraved the minds of many Papists, and sowred their whole Lump with a new malignant livery, which was sweeter and less timerous before.

Now therefore, no safer reremedy could be found, then to debar these unnatural men from all entrance into this Kingdom; which was likewise decreed under penalty of their lives, in the seven and twentieth of her raign.

Not long after when the tempest rose and fell upon this land; the event well declared what love remained in these mens brests towards their dearest Country; for, so were they blinded with hate and envy, that they rested neither night nor day, binding themselves with Vowes and Sacraments, to bring it into bondage of a forraign Enemy.

Hereupon, albeit the clouds of Spain (which caused this severity) were blown over, and vanished; yet, the remembrance of danger passed, struck deep in the mindes of men; and, because it would have been accounted levity to have repealed those Lawes, and unfaithfulness to neglect them once established; The Queen was so drawn with weight of affairs, that it was no more in her power to set them in that former estate wherein they were before, in the twenty third of her raign.

Hereunto may be added, that although there was not wanting the industry of divers Ministers to increase her exchequer; and justice of others to urge exemption of the Lawes, wherein they onely saw the publike safety to consist; yet, constant to her natural clemency, she debated the keenness of their edge, that the Priests who suffered death were very few in regard of their exceeding number.

These things I rehearse, not, as points of her defence, this cause needeth no justification; whereas both the safety of this Kingdom required no less, and the whole course of this severity, fell far short of the bloody examples amongst the Papists; which rather flowed from pride and malice, then any necessity: But I am not forgetful of my first affection, having by this time sufficiently shown that

this Prince was moderate in cause of Religion, and if any sharpness happened therein, that it proceeded not from her nature, but from the iniquity of the times.

Of her great care and constancy in true religion, this may be a certain Argument, that albeit popery had been established by much power and study in her sisters raign, and had taken deep root by time, and was still confirmed by the writ and assent of all in Authority; yet, since that it neither agreed with the word of God, nor the primitive pureness, nor her own conscience, she pluck'd it up, with little help, and abolished it with great courage and resolution; which was not done upon a rash impetuous fancy, but with maturity and advice; whereof (among many other things) we may take a conjecture by an answer so made upon a by-occasion.

In the beginning of her raign, when Prisoners (as the manner is) were released, for a boon of her new inauguration; A certain Courtier, who by custome had taken up a boldness of speech, and jestingly waited for her as she went to Chappel, when, either of himself, or set on by wiser men, he put an humble petition, crying out aloud withall, That yet there remained four or five honest Prisoners, who were unjustly detained; beseeching he Majesty to set them at Liberty; and they were the four Evangelists, and Saint Paul the Apostle, who had been long shut up in a strange language, as in a Prison, and kept from conversing among the people; to whom she wisely answered, That full inquiry should be made of themselves, whether they would be released, yea, or no: whereby she put off a sudden question, with a suspended answer; and stil reserved the interest of things in her own freedom and decision.

In which business, she proceeded not by peeces, or with trepidation, but in a grave and setled order: First, calling the Synods to conference, and the States to Parliament; and then within compass of one year, so reformed Ecclesiastical affairs, that till her dying day she departed not a whit from the constitution then determined; yea, ever after her custome was to warn almost every Parliament when it sate, that nothing should be changed in the right, and discipline of the Church; and thus far concerning Religion.

Now to leave these sadder things; if any man should think it a lightness that she suffered her self to be courted and wooed, and refused not to be seen upon the scene of Love, even beyond the condition of her Age; this, if it be gently construed, wanted not also a share in admiration; for it soundeth unlike those old Stories of a Maiden Queen living in Elizian Islands, from whose Court none was debarred that used fair accostment, and no lasciviousness in love; But if it be severely scanned, then greater is the wonder; for, albeit that we often see, that a State is loosened by the looseness of the Prince; yet, these delights she used with such a curb, that they little dimmed her fame, less her Majesty, and softned the vigour and dispensation of her State nothing at all.

But to shut up my discourse; the Prince was certainly good and vertuous, and so she desired to seem, she hated vices, and took the way to fame, by that of honour: Whilst I am upon her vertues, I cannot forget one passage, when letters were written to her Ambassadors in France, to deliver some private message to the Queen-Mother then of Valois; wherein her Secretary, as it were, to curry favour, had inserted this clause, that the Ambassador should say, They two were two such Queens, so versed in Soveraign Arts, and seen in politick affairs,as no Kings nor men in the world went beyond them; She misliked the assotiation, and commanded it to be blotted out, saying, The Arts she had learned were of a better stamp, and the principles of a far higher nature, whereby she ruled her people.

She was not puffed up with the length of her raign, although she was long a Queen; for, if any had told her fitly in discourse, That the world would have taken notice of her admirable parts, though she had lived in some mean estate; she would have been well pleased with such insinuations; so much she desired that her vertue should stand alone unbeholding to her fortune for praise.

But if I should enter into her moral or regal commendations, or recite the Roll of her vertue, and rank them in their proper place and light, befitting so rare a Prince, which should slide into the story of her life, it would require greater leasure and a larger vein. I have onely summoned up these two parcels briefly, and sincerely, as I could; for, it must be confessed, That no Commender can be

found sufficient for this Prince, but onely time, which, from the first beginning, never produced in all her sex any one like to her for Civil Government and Administration of Affairs.

FINIS.

De Sapientia Veterum

WISDOM OF THE ANCIENTS

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Preface

THE earliest antiquity lies buried in silence and oblivion, excepting the remains we have of it in sacred writ. This silence was succeeded by poetical fables and these, at length, by the writings we now enjoy; so that the concealed and secret learning of the ancients seems separated from the history and knowledge of the following ages by a veil, or partition-wall of fables, interposing between the things that are lost and those that remain.

Many may imagine that I am here entering upon a work of fancy; or amusement, and design to use a poetical liberty, in explaining poetical fables. It is true, fables in general are composed of ductile matter, that may be drawn into great variety by a witty talent or an inventive genius, and be delivered of plausible meanings which they never contained. But this procedure has already been carried to excess; and great numbers, to procure the sanction of antiquity to their own notions and inventions, have miserably wrested and abused the fables of the ancients.

Nor is this only a late or unfrequent practice, but of ancient date and common even to this day. Thus Chrysippus, like an interpreter of dreams, attributed the opinions of the Stoics to the poets of old; and the chemists, at present, more childishly apply the poetical transformations to their experiments of the furnace. And though I have well weighed and considered all this, and thoroughly seen into the levity which the mind indulges for allegories and allusions, yet I cannot but retain a high value for the ancient mythology. And, certainly, it were very injudicious to suffer the fondness and licentiousness of a few to detract from the honour of allegory and parable in general. This would be rash, and almost profane; for, since religion delights in such shadows and disguises, to abolish them were, in a manner, to prohibit all intercourse betwixt things divine and human.

Upon deliberate consideration, my judgment is, that a concealed instruction and allegory was originally intended in many of the ancient fables. This opinion

may, in some respect, be owing to the veneration I have for antiquity, but more to observing that some fables discover a great and evident similitude, relation, and connection with the thing they signify, as well in the structure of the fable as in the propriety of the names whereby the persons or actors are characterized; insomuch, that no one could positively deny a sense and meaning to be from the first intended, and purposely shadowed out in them. For who can hear that Fame, after the giants were destroyed, sprung up as their posthumous sister, and not apply it to the clamour of parties and the seditious rumours which commonly fly about for a time upon the quelling of insurrections? Or who can read how the giant Typhon cut out and carried away Jupiter's sinews - which Mercury afterwards stole and again restored to Jupiter - and not presently observe that this allegory denotes strong and powerful rebellions, which cut away from kings their sinews, both of money and authority; and that the way to have them restored is by lenity, affability, and prudent edicts, which soon reconcile, and as it were steal upon the affections of the subject? Or who, upon hearing that memorable expedition of the gods against the giants, when the braying of Silenus's ass greatly contributed in putting the giants to flight, does not clearly conceive that this directly points at the monstrous enterprises of rebellious subjects, which are frequently frustrated and disappointed by vain fears and empty rumours?

Again, the conformity and purport of the names is frequently manifest and self-evident. Thus Metis the wife of Jupiter, plainly signifies counsel; Typhon, swelling; Pan, universality; Nemesis, revenge, &c. Nor is it a wonder, if sometimes a piece of history or other things are introduced, by way of ornament; or if the times of the action are confounded; or if part of one fable be tacked to another; or if the allegory be new turned; for all this must necessarily happen, as the fables were the inventions of men who lived in different ages and had different views; some of them being ancient, others more modern; some having an eye to natural philosophy, and others to morality or civil policy.

It may pass for a farther indication of a concealed and secret meaning, that some of these fables are so absurd and idle in their narration as to show and

proclaim an allegory, even afar off. A fable that carries probability with it may be supposed invented for pleasure, or in imitation of history; but those that could never be conceived or related in this way must surely have a different use. For example, what a monstrous fiction is this, that Jupiter should take Metis to wife, and as soon as he found her pregnant eat her up, whereby he also conceived, and out of his head brought forth Pallas armed. Certainly no mortal could, but for the sake of the moral it couches, invent such an absurd dream as this, so much out of the road of thought!

But the argument of most weight with me is this, that many of these fables by no means appear to have been invented by the persons who relate and divulge them, whether Homer, Hesiod, or others; for if I were assured they first flowed from those later times and authors that transmit them to us, I should never expect anything singularly great or noble from such an origin. But who-ever attentively considers the thing, will find that these fables are delivered down and related by those writers, not as matters then first invented and proposed, but as things received and embraced in earlier ages. Besides, as they are differently related by writers nearly of the same ages, it is easily perceived that the relators drew from the common stock of ancient tradition, and varied but in point of embellishment, which is their own. And this principally raises my esteem of these fables, which I receive, not as the product of the age, or invention of the poets, but as sacred relics, gentle whispers, and the breath of better times, that from the traditions of more ancient nations came, at length, into the flutes and trumpets of the Greeks. But if any one shall, notwithstanding this, contend that allegories are always adventitious, or imposed upon the ancient fables, and no way native or genuinely contained in them, we might here leave him undisturbed in that gravity of judgment he affects (though we cannot help accounting it somewhat dull and phlegmatic), and if it were worth the trouble, proceed to another kind of argument.

Men have proposed to answer two different and contrary ends by the use of parable; for parables serve as well to instruct or illustrate as to wrap up and envelop, so that though, for the present, we drop the concealed use, and suppose

the ancient fables to be vague, undeterminate things, formed for amusement, still the other use must remain, and can never be given up. And every man, of any learning, must readily allow that this method of instructing is grave, sober, or exceedingly useful, and sometimes necessary in the sciences, as it opens an easy and familiar passage to the human understanding, in all new discoveries that are abstruse and out of the road of vulgar opinions. Hence, in the first ages, when such inventions and conclusions of the human reason as are now trite and common were new and little known, all things abounded with fables, parables, similes, comparisons and allusions, which were not intended to conceal, but to inform and teach, whilst the minds of men continued rude and unpractised in matters of subtilty and speculation, or even impatient, and in a manner uncapable of receiving such things as did not directly fall under and strike the senses. For as hieroglyphics were in use before writing, so were parables in use before arguments. And even to this day, if any man would let new light in upon the human understanding, and conquer prejudice, without raising contests, animosities, opposition, or disturbance, he must still go in the same path, and have recourse to the like method of allegory, metaphor, and allusion.

To conclude, the knowledge of the early ages was either great or happy; great, if they by design made this use of trope and figure; happy, if, whilst they had other views, they afforded matter and occasion to such noble contemplations. Let either be the case, our pains, perhaps, will not be misemployed, whether we illustrate antiquity or things themselves.

The like indeed has been attempted by others; but to speak ingenuously, their great and voluminous labours have almost destroyed the energy, the efficacy, and grace of the thing, whilst being unskilled in nature, and their learning no more than that of commonplace, they have applied the sense of the parables to certain general and vulgar matters, without reaching to their real purport, genuine interpretation, and fill depth. For myself, therefore, I expect to appear new in these common things, because, leaving untouched such as are sufficiently plain and open, I shall drive only at those that are either deep or rich.

Chapter I

Cassandra, or Divination Explained of too Free and Unseasonable Advice

THE Poets relate, that Apollo, falling in love with Cassandra, was still deluded and put off by her, yet fed with hopes, till she had got from him the gift of prophecy; and having now obtained her end, she flatly rejected his suit. Apollo, unable to recall his rash gift, yet enraged to be outwitted by a girl, annexed this penalty to it, that though she should always prophesy true, she should never be believed; whence her divinations were always slighted, even when she again and again predicted the ruin of her country.

EXPLANATION. - This fable seems invented to express the insignificance of unseasonable advice. For they who are conceited, stubborn, or intractable, and listen not to the instructions of Apollo, the god of harmony, so as to learn and observe the modulations and measures of affairs, the sharps and flats of discourse, the difference between judicious and vulgar ears, and the proper times of speech and silence, let them be ever so intelligent, and ever so frank of their advice, or their counsels ever so good and just, yet all their endeavours, either of persuasion or force, are of little significance, and rather hasten the ruin of those they advise. But, at last, when the calamitous event has made the sufferers feel the effect of their neglect, they too late reverence their advisers, as deep, foreseeing, and faithful prophets.

Of this we have a remarkable instance in Cato of Utica, who discovered afar off, and long foretold, the approaching ruin of his country, both in the first conspiracy, and as it was prosecuted in the civil war between Cæsar and Pompey yet did no good the while, but rather hurt the commonwealth, and hurried on its destruction, which Cicero wisely observed in these words: “Cato, indeed, judges excellently, but prejudices the state; for he speaks as in the commonwealth of Plato, and not as in the dregs of Romulus.”

Chapter II

Typhon, or a Rebel Explained of Rebellion

THE fable runs, that Juno, enraged at Jupiter's bringing forth Pallas without her assistance, incessantly solicited all the gods and goddesses, that she might produce without Jupiter: and having by violence and importunity obtained the grant, she struck the earth, and thence immediately sprung up Typhon, a huge and dreadful monster, whom she committed to the nursing of a serpent. As soon as he was grown up, this monster waged war on Jupiter, and taking him prisoner in the battle, carried him away on his shoulders, into a remote and obscure quarter: and there cutting out the sinews of his hands and feet, he bore them off, leaving Jupiter behind miserably maimed and mangled.

But Mercury afterwards stole these sinews from Typhon, and restored them to Jupiter. Hence, recovering his strength, Jupiter again pursues the monster; first wounds him with a stroke of his thunder, when serpents arose from the blood of the wound: and now the monster being dismayed, and taking to flight, Jupiter next darted Mount Ætna upon him, and crushed him with the weight.

EXPLANATION. - This fable seems designed to express the various fates of kings, and the turns that rebellions sometimes take, in kingdoms. For princes may be justly esteemed married to their states, as Jupiter to Juno : but it sometimes happens, that, being depraved by long wielding of the sceptre, and growing tyrannical, they would engross all to themselves; and slighting the counsel of their senators and nobles, conceive by themselves; that is, govern according to their own arbitrary will and pleasure. This inflames the people, and makes them endeavour to create and set up some head of their own. Such designs are generally set on foot by the secret motion and instigation of the peers and nobles, under whose connivance the common sort are prepared for rising: whence proceeds a swell in the state, which is appositely denoted by the nursing of Typhon. This growing posture of affairs is fed by the natural depravity, and

malignant dispositions of the vulgar, which to kings is an envenomed serpent. And now the disaffected, uniting their force, at length break out into open rebellion, which, producing infinite mischiefs, both to prince and people, is represented by the horrid and multiplied deformity of Typhon, with his hundred heads, denoting the divided powers; his flaming mouths, denoting fire and devastation; his girdles of snakes, denoting sieges and destruction; his iron hands, slaughter and cruelty; his eagle's talons, rapine and plunder; his plumed body, perpetual rumours, contradictory accounts, &c. And sometimes these rebellions grow so high, that kings are obliged, as if carried on the backs of the rebels, to quit the throne, and retire to some remote and obscure part of their dominions, with the loss of their sinews, both of money and majesty.

But if now they prudently bear this reverse of fortune, they may, in a short time, by the assistance of Mercury, recover their sinews again; that is, by becoming moderate and affable; reconciling the minds and affections of the people to them, by gracious speeches, and prudent proclamations, which will win over the subject cheerfully to afford new aids and supplies, and add fresh vigour to authority. But prudent and wary princes here seldom incline to try fortune by a war, yet do their utmost, by some grand exploit, to crush the reputation of the rebels: and if the attempt succeeds, the rebels, conscious of the wound received, and distrustful of their cause, first betake themselves to broken and empty threats; like the hissings of serpents; and next, when matters are grown desperate, to flight. And now, when they thus begin to shrink, it is safe and seasonable for kings to pursue them with their forces, and the whole strength of the kingdom; thus effectually quashing and suppressing them, as it were by the weight of a mountain.

Chapter III

Cyclops, or the Ministers of Terror Explained of Base Court Officers

IT is related that the Cyclops, for their savageness and cruelty, were by Jupiter first thrown into Tartarus, and there condemned to perpetual imprisonment: but that afterwards, Tellus persuaded Jupiter it would be for his service to release them, and employ them in forging thunderbolts. This he accordingly did; and they, with unwearied pains and diligence, hammered out his bolts, and other instruments of terror, with a frightful and continual din of the anvil.

It happened long after, that Jupiter was displeased with Æsculapius, the son of Apollo, for having, by the art of medicine, restored a dead man to life: but concealing, his indignation, because the action in itself was pious and illustrious, he secretly incensed the Cyclops against him, who, without remorse, presently slew him with their thunderbolts: in revenge whereof, Apollo, with Jupiter's connivance, shot them all dead with his arrows.

EXPLANATION. - This fable seems to point at the behaviour of princes, who, having cruel, bloody, and oppressive ministers, first punish and displace them; but afterwards, by the advice of Tellus, that is, some earthly-minded and ignoble person, employ them again, to serve a turn, when there is occasion for cruelty in execution, or severity in exaction: but these ministers being base in their nature, whet by their former disgrace, and well aware of what is expected from them, use double diligence in their office; till, proceeding unwarily, and over-eager to gain favour, they sometimes, from the private nods, and ambiguous orders of their prince, perform some odious or execrable action: When princes, to decline the envy themselves, and knowing they shall never want such tools at their back, drop them, and give them up to the friends and followers of the injured person; thus exposing them, as sacrifices to revenge and popular odium: whence with great applause, acclamations, and good wishes to the prince, these miscreants at last meet with their desert.

Chapter IV

Narcissus, or Self-Love

NARCISSUS is said to have been extremely beautiful and comely, but intolerably proud and disdainful; so that, pleased with himself, and scorning the world, he led a solitary life in the woods; hunting only with a few followers, who were his professed admirers, amongst whom the nymph Echo was his constant attendant. In this method of life it was once his fate to approach a clear fountain, where he laid himself down to rest, in the noonday heat; when, beholding his image in the water, he fell into such a rapture and admiration of himself, that he could by no means be got away, but remained continually fixed and gazing, till at length he was turned into a flower, of his own name, which appears early in the spring, and is consecrated to the infernal deities, Pluto, Proserpine, and the Furies.

EXPLANATION. - This fable seems to paint the behaviour and fortune of those, who, for their beauty, or other endowments, wherewith nature (without any industry of their own) has graced and adorned them, are extravagantly fond of themselves: for men of such a disposition generally affect retirement, and absence from public affairs; as a life of business must necessarily subject them to many neglects and contempts, which might disturb and ruffle their minds whence such persons commonly lead a solitary, private, and shadowy life; see little company, and those only such as highly admire and reverence them; or, like an echo, assent to all they say.

And they who are depraved, and rendered still fonder of themselves by this custom, grow strangely indolent, unactive, and perfectly stupid. The Narcissus, a spring flower, is an elegant emblem of this temper, which at first flourishes, and is talked of, but when ripe, frustrates the expectation conceived of it.

And that this flower should be sacred to the infernal powers, carries out the allusion still farther; because men of this humour are perfectly useless in all

respects: for whatever yields no fruit, but passes, and is no more, like the way of a ship in the sea, was by the ancients consecrated to the infernal shades and powers.

Chapter V

The River Styx, or Leagues Explained of Necessity, in the Oaths or Solemn Leagues of Princes

THE only solemn oath, by which the gods irrevocably obliged themselves, is a well-known thing, and makes a part of many ancient fables. To this oath they did not invoke any celestial divinity, or divine attribute, but only called to witness the river Styx; which, with many meanders, surrounds the infernal court of Dis. For this form alone, and none but this, was held inviolable and obligatory: and the punishment of falsifying it, was that dreaded one of being excluded, for a certain number of years, the table of the gods.

EXPLANATION. - This fable seems invented to show the nature of the compacts and confederacies of princes; which, though ever so solemnly and religiously sworn to, prove but little the more binding for it: so that oaths in this case seem used, rather for decorum, reputation, and ceremony, than for fidelity, security, and effectuating. And though these oaths were strengthened with the bonds of affinity, which are the links and ties of nature, and again, by mutual services and good offices, yet we see all this will generally give way to ambition, convenience, and the thirst of power: the rather, because it is easy for princes, under various specious pretences, to defend, disguise, and conceal their ambitious desires, and insincerity; having no judge to call them to account. There is, however, one true and proper confirmation of their faith, though no celestial divinity; but that great divinity of princes, Necessity; or, the danger of the state; and the securing of advantage.

This necessity is elegantly represented by Styx, the fatal river, that can never be crossed back. And this deity it was, which Iphicrates the Athenian invoked in making a league: and because he roundly and openly avows what most others studiously conceal, it may be proper to give his own words. Observing that the Lacedæmonians were inventing and proposing a variety of securities, sanctions,

and bonds of alliance, he interrupted them thus: “There may indeed, my friends, be one bond and means of security between us; and that is, for you to demonstrate you have delivered into our hands, such things as that if you had the greatest desire to hurt us you could not be able.” Therefore, if the power of offending be taken away, or if by a breach of compact there be danger of destruction or diminution to the state or tribute, then it is that covenants will be ratified, and confirmed, as it were by the Stygian oath, whilst there remains an impending danger of being prohibited and excluded the banquet of the gods; by which expression the ancients denoted the rights and prerogatives, the affluence and the felicities, of empire and dominion.

Chapter VI

Pan, or Nature Explained of Natural Philosophy

THE ancients have, with great exactness, delineated universal nature under the person of Pan. They leave his origin doubtful; some asserting him the son of Mercury, and others the common offspring of all Penelope's suitors. The latter supposition doubtless occasioned some later rivals to entitle this ancient fable Penelope; a thing frequently practised when the earlier relations are applied to more modern characters and persons, though sometimes with great absurdity and ignorance, as in the present case; for Pan was one of the ancientest gods, and long before the time of Ulysses; besides, Penelope was venerated by antiquity for her matronal chastity. A third sort will have him the issue of Jupiter and Hybris, that is, Reproach. But whatever his origin was, the Destinies are allowed his sisters.

He is described by antiquity, with pyramidal horns reaching up to heaven, a rough and shaggy body, a very long beard, of a biform figure, human above, half brute below, ending in goat's feet. His arms, or ensigns of power, are, a pipe in his left hand, composed of seven reeds; in his right a crook; and he wore for his mantle a leopard's skin.

His attributes and titles were the god of hunters, shepherds, and all the rural inhabitants; president of the mountains; and, after Mercury, the next messenger of the gods. He was also held the leader and ruler of the Nymphs, who continually danced and frisked about him, attended with the Satyrs and their elders, the Sileni. He had also the power of striking terrors, especially such as were vain and superstitious; whence they came to be called panic terrors.

Few actions are recorded of him, only a principal one is, that he challenged Cupid at wrestling, and was worsted. He also catched the giant Typhon in a net, and held him fast. They relate farther of him, that when Ceres, growing disconsolate for the rape of Proserpine, hid herself, and all the gods took the

utmost pains to find her, by going out different ways for that purpose, Pan only had the good fortune to meet her, as he was hunting, and discovered her to the rest. He likewise had the assurance to rival Apollo in music; and in the judgment of Midas was preferred; but the judge had, though with great privacy and secrecy, a pair of ass's ears fastened on him for his sentence.

There is very little said of his amours; which may seem strange among such a multitude of gods, so profusely amorous. He is only reported to have been very fond of Echo, who was also esteemed his wife; and one nymph more, called Syrinx, with the love of whom Cupid inflamed him for his insolent challenge; so he is reported once to have solicited the moon to accompany him apart into the deep woods.

Lastly, Pan had no descendant, which also is a wonder, when the male gods were so extremely prolific; only he was the reputed father of a servant-girl called Iambe, who used to divert strangers with her ridiculous prattling stories.

This fable is perhaps the noblest of all antiquity, and pregnant with the mysteries and secrets of nature. Pan, as the name imports, represents the universe, about whose origin there are two opinions, viz., that it either sprung from Mercury, that is, the divine word, according to the Scriptures and philosophical divines, or from the confused seeds of things. For they who allow only one beginning of all things, either ascribe it to God; or, if they suppose a material beginning, acknowledge it to be various in its powers; so that the whole dispute comes to these points; viz., either that nature proceeds from Mercury, or from Penelope and all her suitors.

The third origin of Pan seems borrowed by the Greeks from the Hebrew mysteries, either by means of the Egyptians, or otherwise; for it relates to the state of the world, not in its first creation, but so made subject to death and corruption after the fall; and in this state it was and remains, the offspring of God and Sin, or Jupiter and Reproach. And therefore these three several accounts of Pan's birth may seem true, if duly distinguished in respect of things and times. For this Pan, or the universal nature of things, which we view and contemplate,

had its origin from the divine Word and confused matter, first created by God himself, with the subsequent introduction of sin, and consequently corruption.

The Destinies, or the natures and fates of things, are justly made Pan's sisters, as the chain of natural causes links together the rise, duration, and corruption; the exaltation, degeneration, and workings; the processes, the effects, and changes, of all that can any way happen to things.

Horns are given him, broad at the roots, but narrow and sharp at the top, because the nature of all things seems pyramidal; for individuals are infinite, but being collected into a variety of species, they rise up into kinds, and these again ascend, and are contracted into generals, till at length nature may seem collected to a point. And no wonder if Pan's horns reach to the heavens, since the sublimities of nature, or abstract ideas, reach in a manner to things divine; for there is a short and ready passage from metaphysics to natural theology.

Pan's body, or the body of nature, is, with great propriety and elegance, painted shaggy and hairy, as representing the rays of things; for rays are as the hair, or fleece of nature, and more or less worn by all bodies. This evidently appears in vision, and in all effects or operations at a distance; for whatever operates thus may be properly said to emit rays. But particularly the beard of Pan is exceeding long, because the rays of the celestial bodies penetrate, and act to a prodigious distance, and have descended into the interior of the earth so far as to change its surface; and the sun himself, when clouded on its upper part, appears to the eye bearded.

Again, the body of nature is justly described biform, because of the difference between its superior and inferior parts, as the former, for their beauty, regularity of motion, and influence over the earth, may be properly represented by the human figure, and the latter, because of their disorder, irregularity, and subjection to the celestial bodies, are by the brutal. This biform figure also represents the participation of one species with another; for there appear to be no simple natures; but all participate or consist of two: thus man has somewhat of the brute, the brute somewhat of the plant, the plant somewhat of the mineral; so

that all natural bodies have really two faces, or consist of a superior and an inferior species.

There lies a curious allegory in the making of Pan goatfooted, on account of the motion of ascent which the terrestrial bodies have towards the air and heavens; for the goat is a clambering creature, that delights in climbing up rocks and precipices; and in the same manner the matters destined to this lower globe strongly affect to rise upwards, as appears from the clouds and meteors.

Pan's arms, or the ensigns he bears in his hands, are of two kinds - the one an emblem of harmony, the other of empire. His pipe, composed of seven reeds, plainly denotes the consent and harmony, or the concords and discords of things, produced by the motion of the seven planets. His crook also contains a fine representation of the ways of nature, which are partly straight and partly crooked; thus the staff, having an extraordinary bend towards the top, denotes that the works of Divine Providence are generally brought about by remote means, or in a circuit, as if somewhat else were intended rather than the effect produced, as in the sending of Joseph into Egypt, &c. So likewise in human government, they who sit at the helm manage and wind the people more successfully by pretext and oblique courses, than they could by such as are direct and straight; so that, in effect, all sceptres are crooked at the top.

Pan's mantle, or clothing, is with great ingenuity made of a leopard's skin, because of the spots it has; for in like manner the heavens. are sprinkled with stars, the sea with islands, the earth with flowers, and almost each particular thing is variegated, or wears a mottled coat.

The office of Pan could not be more livelily expressed than by making him the god of hunters; for every natural action, every motion and process, is no other than a chase: thus arts and sciences hunt out their works, and human schemes and counsels their several ends; and all living creatures either hunt out their aliment, pursue their prey, or seek their pleasures, and this in a skilful and sagacious manner. He is also styled the god of the rural inhabitants, because men in this situation live more according to nature than they do in cities and courts,

where nature is so corrupted with effeminate arts, that the saying of the poet may be verified -

- pars minima est ipsa puella sui.

He is likewise particularly styled President of the Mountains, because in mountains and lofty places the nature of things lies more open and exposed to the eye and the understanding.

In his being called the messenger of the gods, next after Mercury, lies a divine allegory, as next after the Word of God, the image of the world is the herald of the Divine power and wisdom, according to the expression of the Psalmist, “The heavens declare the glory of God, and the firmament showeth his handiwork.”

Pan is delighted with the company of the Nymphs; that is, the souls of all living creatures are the delight of the world; and he is properly called their governor, because each of them follows its own nature as a leader, and all dance about their own respective rings, with infinite variety and never-ceasing motion. And with these continually join the Satyrs and Sileni; that is, youth and age: for all things have a kind of young, cheerful, and dancing time; and again their time of slowness, tottering, and creeping. And whoever, in a true light, considers the motions and endeavours of both these ages, like another Democritus, will perhaps find them as odd and strange as the gesticulations and antic motions of the Satyrs and Sileni.

The power he had of striking terrors contains a very sensible doctrine; for nature has implanted fear in all living creatures; as well to keep them from risking their lives, as to guard against injuries and violence; and yet this nature or passion keeps not its bounds, but with just and profitable fears always mixes such as are vain and senseless; so that all things, if we could see their insides, would appear full of panic terrors. Thus mankind, particularly the vulgar, labour under a high degree of superstition, which is nothing more than a panic-dread that principally reigns in unsettled and troublesome times.

The presumption of Pan in challenging Cupid to the conflict, denotes that matter has an appetite and tendency to a dissolution of the world, and falling

back to its first chaos again, unless this depravity and inclination were restrained and subdued by a more powerful concord and agreement of things, properly expressed by Love or Cupid; it is therefore well for mankind, and the state of all things, that Pan was thrown and conquered in the struggle. His catching and detaining Typhon in the net receives a similar explanation; for whatever vast and unusual swells, which the word typhon signifies, may sometimes be raised in. nature, as in the sea, the clouds, the earth, or the like, yet nature catches, entangles, and holds all such outrages and insurrections in her inextricable net, wove as it were of adamant.

That part of the fable which attributes the discovery of lost Ceres to Pan whilst he was hunting - a happiness denied the other gods, though they diligently and expressly sought her - contains an exceeding just and prudent admonition; viz., that we are not to expect the discovery of things useful in common life, as that of corn, denoted by Ceres, from abstract philosophies, as if these were the gods of the first order, - no, not though we used our utmost endeavours this way, - but only from Pan, that is, a sagacious experience and general knowledge of nature, which is often found, even by accident, to stumble upon such discoveries whilst the pursuit was directed another way.

The event of his contending with Apollo in music affords us a useful instruction, that may help to humble the human reason and judgment, which is too apt to boast and glory in itself. There seem to be two kinds of harmony - the one of Divine Providence, the other of human reason; but the government of the world, the administration of its affairs, and the more secret Divine judgments, sound harsh. and dissonant to human ears or human judgment: and though this ignorance be justly rewarded with asses' ears, yet they are put on and worn, not openly, but with great secrecy; nor is the deformity of the thing seen or observed by the vulgar.

We must not find it strange if no amours are related of Pan besides his marriage with Echo; for nature enjoys itself, and in itself all other things. He that loves desires enjoyment, but in profusion there is no room for desire; and therefore Pan, remaining content with himself, has no passion unless it be for

discourse, which is well shadowed out by Echo or task, or when it is more accurate, by Syrinx or writing. But Echo makes a most excellent wife for Pan, as being no other than genuine philosophy, which faithfully repeats his words, or only transcribes exactly as nature dictates; thus representing the true image and reflection of the world without adding a tittle.

It tends also to the support and perfection of Pan or nature to be without offspring; for the world generates in its parts, and not in the way of a whole, as wanting a body external to itself wherewith to generate.

Lastly, for the supposed or spurious prattling daughter of Pan, it is an excellent addition to the fable, and aptly represents the talkative philosophies that have at all times been stirring, and filled the world with idle tales, being ever barren, empty, and servile, though sometimes indeed diverting and entertaining, and sometimes again troublesome and importunate.

Chapter VII

Perseus, or War Explained of the Preparation and Conduct Necessary to War

THE fable relates, that Perseus was despatched from the cast by Pallas, to cut off Medusa's head, who had committed great ravage upon the people of the west; for this Medusa was so dire a monster as to turn into stone all those who but looked upon her. She was a Gorgon, and the only mortal one of the three, the other two being invulnerable. Perseus, therefore, preparing himself for this grand enterprise, had presents made him from three of the gods: Mercury gave him wings for his heels; Pluto, a helmet; and Pallas, a shield and a mirror. But though he was now so well equipped, he posted not directly to Medusa, but first turned aside to the Greæ, who were half-sisters to the Gorgons. These Greæ were gray-headed, and like old women from their birth, having among them all three but one eye, and one tooth, which, as they had occasion to go out, they each wore by turns, and laid them down again upon coming back. This eye and this tooth they lent to Perseus, who now judging himself sufficiently furnished, he, without farther stop, flies swiftly away to Medusa, and finds her asleep. But not venturing his eyes, for fear she should wake, he turned his head aside, and viewed her in Pallas's mirror; and thus directing his stroke, cut off her head; when immediately, from the gushing blood, there darted Pegasus, winged. Perseus now inserted Medusa's head into Pallas's shield, which thence retained the faculty of astonishing and benumbing all who looked on it."

This fable seems invented to show the prudent method of choosing, undertaking, and conducting a war; and, accordingly, lays down three useful precepts about it, as if they were the precepts of Pallas.

(1.) The first is, that no prince should be over-solicitous to subdue a neighbouring nation; for the method of enlarging an empire is very different from that of increasing an estate. Regard is justly had to contiguity, or adjacency, in private lands and possessions; but in the extending of empire, the occasion,

the facility, and advantage of a war, are to be regarded instead of vicinity. It is certain that the Romans, at the time they stretched but little beyond Liguria to the west, had by their arms subdued the provinces as far as Mount Taurus to the east. And thus Perseus readily undertook a very long expedition, even from the east to the extremities of the west.

The second precept is, that the cause of the war be just and honourable; for this adds alacrity both to the soldiers, and the people who find the supplies; procures aids, alliances, and numerous other conveniences. Now there is no cause of war more just and laudable, than the suppressing of tyranny, by which a people are dispirited, benumbed, or left without life and vigour, as at the sight of Medusa.

Lastly, it is prudently added, that as there were three of the Gorgons, who represent war, Perseus singled her out for his expedition that was mortal; which affords this precept, that such kind of wars should be chose as may be brought to a conclusion, without pursuing vast and infinite hopes.

Again, Perseus's setting-out is extremely well adapted to his undertaking, and in a manner commands success; he received despatch from Mercury, secrecy from Pluto, and foresight from Pallas. It also contains an excellent allegory, that the wings given him by Mercury were for his heels, not for his shoulders; because expedition is not so much required in the first preparations for war, as in the subsequent matters, that administer to the first; for there is no error more frequent in war, than, after brisk preparations, to halt for subsidiary forces and effective supplies.

The allegory of Pluto's helmet, rendering men invisible and secret, is sufficiently evident of itself; but the mystery of the shield and the mirror lies deeper, and denotes, that not only a prudent caution must be had to defend, like the shield, but also such an address and penetration as may discover the strength, the motions, the counsels, and designs of the enemy; like the mirror of Pallas.

But though Perseus may now seem extremely well prepared, there still remains the most important thing of all; before he enters upon the war, he must of necessity consult the Greæ. These Greæ are treasons; half, but degenerate

sisters of the Gorgons; who are representatives of wars: for wars are generous and noble; but treasons base and vile. The Greæ are elegantly described as hoary-headed, and like old women from their birth; on account of the perpetual cares, fears, and trepidations attending traitors. Their force, also, before it breaks out into open revolt, consists either in an eye or a tooth; for all faction, alienated from a state, is both watchful and biting; and this eye and tooth are, as it were, common to all the disaffected; because whatever they learn and know is transmitted from one to another, as by the hands of faction. And for the tooth, they all bite with the same; and clamour with one throat; so that each of them singly expresses the multitude.

These Greæ, therefore, must be prevailed upon by Perseus to lend him their eye and their tooth; the eye to give him indications, and make discoveries; the tooth for sowing rumours, raising envy, and stirring up the minds of the people. And when all these things are thus disposed and prepared, then follows the action of the war.

He finds Medusa asleep; for whoever undertakes a war with prudence, generally falls upon the enemy unprepared, and nearly in a state of security; and here is the occasion for Pallas's mirror: for it is common enough, before the danger presents itself, to see exactly into the state and posture of the enemy; but the principal use of the glass is, in the very instant of danger, to discover the manner thereof, and prevent consternation; which is the thing intended by Perseus's turning his head aside, and viewing the enemy in the glass.

Two effects here follow the conquest: 1. The darting forth of Pegasus; which evidently denotes fame, that flies abroad, proclaiming the victory far and near. 2. The bearing of Medusa's head in the shield, which is the greatest possible defence and safeguard; for one grand and memorable enterprise, happily accomplished, bridles all the motions and attempts of the enemy, stupifies disaffection, and quells commotions.

Chapter VIII

Endymion, or a Favourite Explained of Court Favourites

THE goddess Luna is said to have fallen in love with the shepherd Endymion, and to have carried on her amours with him in a new and singular manner; it being her custom, whilst he lay reposing in his native cave, under Mount Latmus, to descend frequently from her sphere, enjoy his company whilst he slept, and then go up to heaven again. And all this while, Endymion's fortune was no way prejudiced by his unactive and sleepy life, the goddess causing his flocks to thrive, and grow so exceeding numerous, that none of the other shepherds could compare with him.

EXPLANATION - This fable seems to describe the tempers and dispositions of princes, who, being thoughtful and suspicious, do not easily admit to their privacies such men as are prying, curious, and vigilant, or, as it were, sleepless; but rather such as are of an easy, obliging nature, and indulge them in their pleasures, without seeking anything farther; but seeming ignorant, insensible, or, as it were, lulled asleep before them. Princes usually treat such persons familiarly; and, quitting their throne like Luna, think they may with safety unbosom to them. This temper was very remarkable in Tiberius, a prince exceeding difficult to please, and who had no favourites but those that perfectly understood his way, and, at the same time, obstinately dissembled their knowledge, almost to a degree of stupidity.

The cave is not improperly mentioned in the fable; it being a common thing for the favourites of a prince to have their pleasant retreats, whither to invite him, by way of relaxation, though without prejudice to their own fortunes; these favourites usually making a good provision for themselves.

For though their prince should not, perhaps, promote them to dignities, yet, out of real affection, and not only for convenience, they generally feel the enriching influence of his bounty.

Chapter IX

The Sister of the Giants, or Fame Explained of Public Detraction

THE poets relate, that the giants, produced from the earth, made war upon Jupiter, and the other gods, but were repulsed and conquered by thunder; whereat the earth, provoked, brought forth Fame, the youngest sister of the giants, in revenge for the death of her sons.

EXPLANATION - The meaning of the fable seems to be this: the earth denotes the nature of the vulgar, who are always swelling, and rising against their rulers, and endeavouring at changes. This disposition, getting a fit opportunity, breeds rebels and traitors, who, with impetuous rage, threaten and contrive the overthrow and destruction of princes.

And when brought under and subdued, the same vile and restless nature of the people, impatient of peace, produces rumours, detractions, slanders, libels, &c., to blacken those in authority; so that rebellious actions and seditious rumours, differ not in origin and stock, but only as it were in sex; treasons and rebellions being the brothers, and scandal or detraction the sister.

Chapter X

Acteon and Pentheus, or a Curious Man Explained of Curiosity, or Prying into the Secrets of Princes and Divine Mysteries

THE ancients afford us two examples for suppressing the impertinent curiosity of mankind, in diving into secrets, and imprudently longing and endeavouring to discover them. The one of these is in the person of Acteon, and the other in that of Pentheus. Acteon, undesignedly chancing to see Diana naked, was turned into a stag, and torn to pieces by his own hounds. And Pentheus, desiring to pry into the hidden mysteries of Bacchus's sacrifice, and climbing a tree for that purpose, was struck with a phrensy. This phrensy of Pentheus caused him to see things double, particularly the sun, and his own city Thebes, so that running homewards, and immediately espying another Thebes, he runs towards that; and thus continues incessantly tending first to the one, and then to the other, without coming at either.

EXPLANATION - The first of these fables may relate to the secrets of princes, and the second to divine mysteries. For they, who are not intimate with a prince, yet against his will have a knowledge of his secrets, inevitably incur his displeasure; and therefore, being aware that they are singled out, and all opportunities watched against them, they lead the life of a stag, full of fears and suspicions. It likewise frequently happens that their servants and domestics accuse them, and plot their overthrow, in order to procure favour with the prince; for whenever the king manifests his displeasure, the person it falls upon must expect his servants to betray him, and worry him down, as Acteon was worried by his own dogs.

The punishment of Pentheus is of another kind; for they who, unmindful of their mortal state, rashly aspire to divine mysteries, by climbing the heights of nature and philosophy, here represented by climbing a tree, - their fate is perpetual inconstancy, perplexity, and, instability of judgment. For as there is

one light of nature, and another light that is divine, they see, as it were, two suns. And as the actions of life, and the determinations of the will, depend upon the understanding, they are distracted as much in opinion as in will; and therefore judge very inconsistently, or contradictorily; and see, as it were, Thebes double: for Thebes being the refuge and habitation of Pentheus, here denotes the ends of actions: whence they know not what course to take, but remaining undetermined and unresolved in their views and designs, they are merely driven about by every sudden gust and impulse of the mind.

Chapter XI

Orpheus, or Philosophy Explained of Natural and Moral Philosophy

INTRODUCTION - The fable of Orpheus, though trite and common, has never been well interpreted, and seems to hold out a picture of universal philosophy; for to this sense may be easily transferred what is said of his being a wonderful and perfectly, divine person, skilled in all kinds of harmony, subduing and drawing all things after him by sweet and gentle methods and modulations. For the labours of Orpheus exceed the labours of Hercules, both in power and dignity, as the works of knowledge exceed the works of strength.

FABLE - Orpheus having his beloved wife snatched from him by sudden death, resolved upon descending to the infernal regions, to try if, by the power of his harp, he could reobtain her. And, in effect, he so appeased and soothed the infernal powers by the melody and sweetness of his harp and voice, that they indulged him the liberty of taking her back, on condition that she should follow him behind, and he not turn to look upon her till they came into open day; but he, through the impatience of his care and affection, and thinking himself almost past danger, at length looked behind him, whereby the condition was violated, and she again precipitated to Pluto's regions. From this time Orpheus grew pensive and sad, a hater of the sex, and went into solitude, where, by the same sweetness of his harp and voice, he first drew the wild beasts of all sorts about him; so that, forgetting their natures, they were neither actuated by revenge, cruelty, lust, hunger, or the desire of prey, but stood gazing about him, in a tame and gentle manner, listening attentively to his music. Nay, so great was the power and efficacy of his harmony, that it even caused the trees and stones to remove, and place themselves in a regular manner about him. When he had for a time, and with great admiration, continued to do this, at length the Thracian women, raised by the instigation of Bacchus, first blew a deep and hoarse-sounding horn, in such an outrageous manner, that it quite drowned the music of

Orpheus. And thus the power which, as the link of their society, held all things in order, being dissolved, disturbance reigned anew; each creature returned to its own nature, and pursued and preyed upon its fellow, as before. The rocks and woods also started back to their former places; and even Orpheus himself was at last torn to pieces by these female furies, and his limbs scattered all over the desert. But, in sorrow and revenge for his death, the river Helicon, sacred to the Muses, hid its waters under ground, and rose again in other places.

EXPLANATION - The fable receives this explanation. The music of Orpheus is of two kinds; one that appeases the infernal powers, and the other that draws together the wild beasts and trees. The former properly relates to natural, and the latter to moral philosophy, or civil society. The reinstatement and restoration of corruptible things is the noblest work of natural philosophy; and, in a less degree, the preservation of bodies in their own state, or a prevention of their dissolution and corruption. And if this be possible, it can certainly be effected no other way than by proper and exquisite attemperations of nature; as it were by the harmony and fine touching of the harp. But as this is a thing of exceeding great difficulty, the end is seldom obtained; and that, probably, for no reason more than a curious and unseasonable impatience and solicitude.

And, therefore, philosophy, being almost unequal to the task, has cause to grow sad, and hence betakes itself to human affair, insinuating into men’s minds the love of virtue, equity, and peace, by means of eloquence and persuasion; thus forming men into societies; bringing them under laws and regulations; and making them forget their unbridled passions and affections, so long as they hearken to precepts and submit to discipline. And thus they soon after build themselves habitations, form cities, cultivate lands, plant orchards, gardens, &c. So that they may not improperly be said to remove and call the trees and stones together.

And this regard to civil affairs is justly and regularly placed after diligent trial made for restoring the mortal body; the attempt being frustrated in the end - because the unavoidable necessity of death, thus evidently laid before mankind,

animates them to seek a kind of eternity by works of perpetuity, character, and fame.

It is also prudently added, that Orpheus was afterwards averse to women and wedlock, because the indulgence of a married state, and the natural affections which men have for their children, often prevent them from entering upon any grand, noble, or meritorious enterprise for the public good; as thinking it sufficient to obtain immortality by their descendants, without endeavouring at great actions.

And even the works of knowledge, though the most excellent among human things, have their periods; for after kingdoms and commonwealths have flourished for a time, disturbances, seditions, and wars, often arise, in the din thereof: first the laws are silent, and not heard; and then men return to their own depraved natures - whence cultivated lands and cities soon become desolate and waste. And if this disorder continues, learning and philosophy is infallibly torn to pieces; so that only some scattered fragments thereof can afterwards be found up and down, in a few places, like planks after a shipwreck. And barbarous times succeeding, the river Helicon dips under-ground; that is, letters are buried, till things having undergone their due course of changes, learning rises again, and show its head, though seldom in the same place, but in some other nation.

Chapter XII

Cœlum, or Beginnings Explained of the Creation, or Origin of all Things

THE poets relate, that Cœlum was the most ancient of all the gods; that his parts of generation were cut off by his Son Saturn; that Saturn had a numerous offspring, but devoured all his sons, as soon as they were born; that Jupiter at length escaped the common fate; and when grown up, drove his father Saturn into Tartarus; usurped the kingdom; cut off his father's genitals, with the same knife wherewith Saturn had dismembered Cœlum, and throwing them into the sea, thence sprung Venus.

Before Jupiter was well established in his empire, two memorable wars were made upon him: the first by the Titans, in subduing of whom, So1, the only one of the Titans who favoured Jupiter, performed him singular service; the second by the giants, who being destroyed and subdued by the thunder and arms of Jupiter, he now reigned secure.

EXPLANATION. - This fable appears to be an enigmatical account of the origin of all things, not greatly differing from the philosophy afterwards embraced by Democritus, who expressly asserts the eternity of matter, but denies the eternity of the world; thereby approaching to the truth of sacred writ, which makes chaos, or uninformed matter, to exist before the six days' works.

The meaning of the fable seems to he this: Cœlum denotes all the concave space, or vaulted roof that incloses all matter, and Saturn the matter itself, which cuts off all power of generation from his father; as one and the same quantity of matter remains invariable in nature, without addition or diminution. But the agitations and struggling motions of matter, first produced certain imperfect and illjoined compositions of things, as it were so many first rudiments, or essays of worlds; till, in process of time, there arose a fabric capable of preserving its form and structure. Whence the first age was shadowed out by the reign of Saturn; who, on account of the frequent dissolutions, and short durations of things, was

said to devour his children. And the second age was denoted by the reign of Jupiter; who thrust, or drove those frequent and transitory changes into Tartarus - a place expressive of disorder. This place seems to be the middle space, between the lower heavens and the internal parts of the earth, wherein disorder, imperfection, mutation, mortality, destruction, and corruption, are principally found.

Venus was not born during the former generation of things, under the reign of Saturn; for whilst discord and jar had the upper hand of concord and uniformity in the matter of the universe, a change of the entire structure was necessary. And in this manner things were generated and destroyed, before Saturn was dismembered. But when this manner of generation ceased, there immediately followed another, brought about by Venus, or a perfect and established harmony of things; whereby clues were wrought in the parts, whilst the universal fabric remained entire and undisturbed. Saturn, however, is said to be thrust out and dethroned, not killed, and become extinct; because, agreeably to the opinion of Democritus, the world might relapse into its old confusion and disorder, which Lucretius hoped would not happen in his time.

But now, when the world was compact, and held together by its own bulk and energy, yet there was no rest from the beginning; for first, there followed considerable motions and disturbances in the celestial regions, though so regulated and moderated by the power of the Sun, prevailing over the heavenly bodies, as to continue the world in its state. Afterwards there followed the like in the lower parts, by inundations, storms, winds, general earthquakes, &c., which, however, being subdued and kept under, there ensued a more peaceable and lasting harmony, and consent of things. It may be said of this fable, that it includes philosophy; and again, that philosophy includes the fable; for we know, by faith, that all these things are but the oracle of sense, long since ceased and decayed; but the matter and fabric of the world being justly attributed to a creator.

Chapter XIII

Proteus, or Matter Explained of Matter and its Changes

PROTEUS, according to the poets, was Neptune's herdsman; an old man, and a most extraordinary prophet, who understood things past and present, as well as future; so that besides the business of divination, he was the revealer and interpreter of all antiquity, and secrets of every kind. He lived in a vast cave, where his custom was to tell over his herd of sea-calves at noon, and then to sleep. Whoever consulted him had no other way of obtaining an answer, but by binding him with manacles and fetters; when he, endeavouring to free himself, would change into all kinds of shapes and miraculous forms; as of fire, water, wild beasts, &c.; till at length he resumed his own shape again.

EXPLANATION. - This fable seems to point at the secrets of nature, and the states of matter. For the person of Proteus denotes matter, the oldest of all things, after God himself; that resides, as in a cave, under the vast concavity of the heavens. He is represented as the servant of Neptune, because the various operations and modifications of matter are principally wrought in a fluid state. The herd, or flock of Proteus, seems to be no other than the several lands of animals, plants, and minerals, in which matter appears to diffuse and spend itself; so that after having formed these several species, and as it were finished its task, it seems to sleep and repose, without otherwise attempting to produce any new ones. And this is the moral Proteus's counting his herd, then going to sleep.

This is said to be done at noon, not in the morning or evening; by which is meant the time best fitted and disposed for the production of species, from a matter duly prepared, and made ready beforehand, and now lying in a middle state, between its first rudiments and decline; which, we learn from sacred history, was the case at the time of the creation; when, by the efficacy of the divine command, matter directly came together, without any transformation or

intermediate changes, which it affects; instantly obeyed the order, and appeared in the form of creatures.

And thus far the fable reaches of Proteus, and his flock, at liberty and unrestrained. For the universe, with the common structures and fabrics of the creatures, is the face of matter, not under constraint, or as the flock wrought upon and tortured by human means. But if any skilful minister of nature shall apply force to matter, and by design torture and vex it, in order to its annihilation, it, on the contrary, being brought under this necessity, changes and transforms itself into a strange variety of shapes and appearances; for nothing but the power of the Creator can annihilate, or truly destroy it; so that at length, running through the whole circle of transformations, and completing its period, it in some degree restores itself, if the force be continued. And that method of binding, torturing, or detaining, will prove the most effectual and expeditious, which makes use of manacles and fetters; that is, lays hold and works upon matter in extremest degrees.

The addition in the fable that makes Proteus a prophet, who had the knowledge of things past, present, and future, excellently agrees with the nature of matter; as he who knows the properties, the changes, and the processes of matter, must of necessity understand the effects and sum of what it does, has done, or can do, though his knowledge extends not to all the parts and particulars thereof.

Chapter XIV

Memnon, or a Youth too Forward Explained of the Fatal Precipitancy of Youth

THE poets made Memnon the son of Aurora, and bring him to the Trojan war in beautiful armour, and flushed with popular praise; where, thirsting after farther glory, and rashly hurrying on to the greatest enterprises, he engages the bravest warrior of all the Greeks, Achilles, and falls by his hand in single combat. Jupiter, in commiseration of his death, sent birds to grace his funeral, that perpetually chanted certain mournful and bewailing dirges. It is also reported, that the rays of the rising sun, striking his statue, used to give a lamenting sound.

EXPLANATION. - This fable regards the unfortunate end of those promising youths, who, like sons of the morning, elate with empty hopes and glittering outsides, attempt things beyond their strength: challenge the bravest heroes; provoke them to the combat; and proving unequal, die in their high attempts.

The death of such youths seldom fails to meet with infinite pity; as no mortal calamity is more moving and afflicting, than to see the flower of virtue cropped before its time. Nay, the prime of life enjoyed to the full, or even to a degree of envy, does not assuage or moderate the grief occasioned by the untimely death of such hopeful youths; but lamentations and bewailings fly, like mournful birds, about the tombs, for a long while after; especially upon all fresh occasions, new commotions, and the beginning of great actions, the passionate desire of them is renewed, as by the sun’s morning rays.

Chapter XV

Tythonus, or Satiety Explained of Predominant Passions

IT is elegantly fabled by Tythonus, that being exceedingly beloved by Aurora, she petitioned Jupiter that he might prove immortal, thereby to secure herself the everlasting enjoyment of his company; but through female inadvertence she forgot to add, that he might never grow old; so that, though he proved immortal, he became miserably worn and consumed with age, inasmuch that Jupiter, out of pity, at length transformed him to a grasshopper.

EXPLANATION. - This fable seems to contain an ingenious description of pleasure; which at first, as it were in the morning of the day, is so welcome, that men pray to have it everlasting, but forget that satiety and weariness of it will, like old age, overtake them, though they think not of it; so that at length, when their appetite for pleasurable actions is gone, their desires and affections often continue; whence we commonly find that aged persons delight themselves with the discourse and remembrance of the things agreeable to them in their better days. This is very remarkable in men of a loose, and men of a military life; the former whereof are always talking over their amours, and the latter the exploits of their youth; like grasshoppers, that show their vigour only by their chirping.

Chapter XVI

Juno's Suitor, or Baseness Explained of Submission and Abjection

THE poets tell us, that Jupiter, to carry on his love-intrigues, assumed many different shapes; as of a bull, an eagle, a swan, a golden shower, &c.; but when he attempted Juno, he turned himself into the most ignoble and ridiculous creature, - even that of a wretched, wet, weather-beaten, affrighted, trembling, and half-starved cuckoo.

EXPLANATION. - This is a wise fable, and drawn from the very entrails of morality. The moral is; that men should not be conceited of themselves, and imagine that a discovery of their excellences will always render them acceptable; for this can only succeed according to the nature and manners of the person they court, or solicit; who, if he be a man not of the same gifts and endowments, but altogether of a haughty and contemptuous behaviour, here represented by the person of Juno, they must entirely drop the character that carries the least show of worth, or gracefulness; if they proceed upon any other footing, it is downright folly; nor is it sufficient to act the deformity of obsequiousness, unless they really change themselves, and become abject and contemptible in their persons.

Chapter XVII

Cupid, or an Atom Explained of the Corpuscular Philosophy

THE particulars related by the poets of Cupid, or Love, do not properly agree to the same person; yet they differ only so far, that if the confusion of persons be rejected, the correspondence may hold. They say, that Love was the most ancient of all the gods, and existed before everything else, except Chaos, which is held coeval therewith. But for Chaos, the ancients never paid divine honours, nor gave the title of a god thereto. Love is represented absolutely without progenitor, excepting only that he is said to have proceeded from the egg of Nox; but that himself begot the gods, and all things else on Chaos. His attributes are four; viz,, 1. perpetual infancy; 2. blindness; 3. nakedness; and 4. archery.

There was also another Cupid, or Love, the youngest son of the gods, born of Venus; and upon him the attributes of the elder are transferred, with some degree of correspondence.

EXPLANATION. - This fable points at, and enters, the cradle of love seems to be the appetite, or incentive, of the primitive matter; or, to speak more distinctly, the natural motion, or moving principle, of the original corpuscles, or atoms; this being the most ancient and only power that made and wrought all things out of matter. It is absolutely without parent, that is, without cause; for causes are as parents to effects; but this power or efficacy could have no natural cause; for, excepting God, nothing was before it; and therefore it could have no efficient in nature. And as nothing is more inward with nature, it can neither be a genus nor a form; and therefore, whatever it is, it must be somewhat positive, though inexpressible. And if it were possible to conceive its modus and process, yet it could not be known from its cause, as being, next to God, the cause of causes, and itself without a cause. And perhaps we are not to hope that the modus of it should fall, or be comprehended, under human inquiry. Whence it is properly feigned to be the egg of Nox, or laid in. the dark.

The divine philosopher declares, that “God has made everything beautiful in its season; and has given over the world to our disputes and inquiries: but that man cannot find out the work which God has wrought, from its beginning up to its end.” Thus the summary or collective law of nature, or the principle of love, impressed by God upon the original particles of all things, so as to make them attack each other and come together, by the repetition and multiplication whereof all the variety in the universe is produced, can scarce possibly find full admittance into the thoughts of men, though some faint notion may be had thereof. The Greek philosophy is subtile, and busied in discovering the material principles of things, but negligent and languid in discovering the principles of motion, in which the energy and efficacy of every operation consists. And here the Greek philosophers seem perfectly blind and childish; for the opinion of the Peripatetics, as to the stimulus of matter, by privation, is little more than words, or rather sound than signification. And they who refer it to God, though they do well therein, yet they do it by a start, and not by proper degrees of assent; for doubtless there is one summary, or capital law, in which nature meets, subordinate to God, viz., the law mentioned in the passage above quoted from Solomon; or the work which God has wrought from its beginning up to its end.

Democritus, who farther considered this subject, having first supposed an atom, or corpuscle, of some dimension or figure, attributed thereto an appetite, dire, or first motion simply, and another comparatively, imagining that all things properly tended to the centre of the world; those containing more matter falling faster to the centre, and thereby removing, and in the shock driving away, such as held less. But this is a slender conceit, and regards too few particulars; for neither the revolutions of the celestial bodies, nor the contractions and expansions of things, can be reduced to this principle. And for the opinion of Epicurus, as to the declination and fortuitous agitation of atoms, this only brings the matter back again to a trifle, and wraps it up in ignorance and night.

Cupid is elegantly drawn a perpetual child; for compounds are larger things, and have their periods of age; but the first seeds or atoms of bodies are small, and remain in a perpetual infant state.

He is again justly represented naked; as all compounds may properly be said to be dressed and clothed, or to assume a personage; whence nothing remains truly naked, but the original particles of things.

The blindness of Cupid, contains a deep allegory; for this same Cupid, Love, or appetite of the world, seems to have very little foresight, but directs his steps and motions conformably to what he finds next him, as blind men do when they feel out their way; which renders the divine and overruling Providence and foresight the more surprising; as by a certain steady law, it brings such a beautiful order and regularity of things out of what seems extremely casual, void of design, and, as it were, really blind.

The last attribute of Cupid is archery, viz., a virtue or power operating at a distance; for everything that operates at a distance, may seem, as it were, to dart, or shoot with arrows. And whoever allows of atoms and vacuity, necessarily supposes that the virtue of atoms operates at a distance; for without this operation, no motion could be excited, on account of the vacuum interposing, but all things would remain sluggish and unmoved.

As to the other Cupid, he is properly said to be the youngest sons of the gods, as his power could not take place before the formation of species, or particular bodies. The description given us of him transfers the allegory to morality, though he still retains some resemblance with the ancient Cupid; for as Venus universally excites the affection of association, and the desire of procreation, her son Cupid applies the affection to individuals; so that the general disposition proceeds from Venus, but the more close sympathy from Cupid. The former depends upon a near approximation of causes, but the latter upon deeper, more necessitating and uncontrollable principles, as if they proceeded from the ancient Cupid, on whom all exquisite sympathies depend.

Chapter XVIII

Diomed, or Zeal Explained of Persecution, or Zeal for Religion

DIOMED acquired great glory and honour at the Trojan war, and was highly favoured by Pallas, who encouraged and excited him by no means to spare Venus, if he should casually meet her in fight. He followed the advice with too much eagerness and intrepidity, and accordingly wounded that goddess in her hand. This presumptuous action remained unpunished for a time, and when the war was ended he returned with great glory and renown to his own country, where, finding himself embroiled with domestic affairs, he retired into Italy. Here also at first he was well received, and nobly entertained by King Daunus, who, besides other gifts and honours, erected statues for him over all his dominions. But upon the first calamity that afflicted the people after the stranger's arrival, Daunus immediately reflected that he entertained a devoted person in his palace, an enemy to the gods, and one who had sacrilegiously wounded a goddess with his sword, whom it was impious but to touch. To expiate, therefore, his country's guilt, he, without regard to the laws of hospitality, which were less regarded by him than the laws of religion, directly slew his guest, and commanded his statues and all his honours to be razed and abolished. Nor was it safe for others to commiserate or bewail so cruel a destiny; but even his companions in arms, whilst they lamented the death of their leader, and filled all places with their complaints were turned into a kind of swans, which are said, at the approach of their own death, to chant sweet melancholy dirges.

EXPLANATION. - This fable intimates an extraordinary and almost singular thing for no hero besides Diomed is recorded to have wounded any of the gods. Doubtless we have here described the nature and fate of a man who professedly makes any divine worship or sect of religion, though in itself vain and light, the only scope of his actions, and resolves to propagate it by fire and sword. For

although the bloody dissensions and differences about religion were unknown to the ancients, yet so copious and diffusive was their knowledge, that what they knew not by experience they comprehended in thought and representation. Those, therefore, who endeavour to reform or establish any sect of religion, though vain, corrupt, and infamous (which is here denoted under the person of Venus), not by the force of reason, learning, sanctity of manners, the weight of arguments, and examples, but would spread or extirpate it by persecution, pains, penalties, tortures, fire and sword, may perhaps be instigated hereto by Pallas, that is, by a certain rigid, prudential consideration, and a severity of judgment, by the vigour and efficacy whereof they see thoroughly into the fallacies and fictions of the delusions of this kind; and through aversion to depravity and a well-meant zeal, these men usually for a time acquire great fame and glory, and are by the vulgar, to whom no moderate measures can be acceptable, extolled and almost adored, as the only patrons and protectors of truth and religion, men of any other disposition seeming, in comparison with these, to be lukewarm, mean-spirited, and cowardly. This fame and felicity, however, seldom endures to the end; but all violence, unless it escapes the reverses and changes of things by untimely death, is commonly unprosperous in the issue; and - if a change of affairs happens, and that sect of religion which was persecuted and oppressed gains strength and rises again, then the real and warm endeavours of this sort of men are condemned, their very name becomes odious, and all their honours terminate in disgrace.

As to the point that Diomed should be slain by his hospitable entertainer, this denotes that religious dissensions may cause treachery, bloody animosities, and deceit, even between the nearest friends.

That complaining or bewailing should not, in so enormous a case, be permitted to friends affected by the catastrophe without punishment, includes this prudent admonition, that almost in all kinds of wickedness and depravity men have still room left for commiseration, so that they who hate the crime may yet pity the person and bewail his calamity, from a principle of humanity and good nature; and to forbid the overflowings and intercourses of pity upon such

occasions were the extremest of evils; yet in the cause of religion and impiety the very commiserations of men are noted and suspected. On the other hand, the lamentations and complainings of the followers and attendants of Diomed, that is, of men of the same sect or persuasion, are usually very sweet, agreeable, and moving, like the dying notes of swans, or the birds of Diomed. This also is a noble and remarkable part of the allegory, denoting that the last words of those who suffer for the sake of religion strongly affect and sway men's minds, and leave a lasting impression upon the sense and memory.

Chapter XIX

Dædalus, or Mechanical Skill Explained of Arts and Artists in Kingdoms and States

THE ancients have left us a description of mechanical skill, industry, and curious arts converted to ill uses, in the person of Dædalus, a most ingenious but execrable artist. This Dædalus was banished for the murder of his brother artist and rival, yet found a kind reception in his banishment from the kings and states where he came. He raised many incomparable edifices to the honour of the gods, and invented many new contrivances for the beautifying and ennobling of cities and public places, but still he was most famous for wicked inventions. Among the rest, by his abominable industry and destructive genius, he assisted in the fatal and infamous production of the monster Minotaur, that devourer of promising youths. And then, to cover one mischief with another, and provide for the security of this monster, he invented and built a labyrinth; a work infamous for it's end and design, but admirable and prodigious for art and workmanship. After this, that he might not only be celebrated for wicked inventions, but be sought after, as well for prevention, as for instruments of mischief, he formed that ingenious device of his clue, which led directly through all the windings of the labyrinth. This Dædalus was persecuted by Minos with the utmost severity, diligence, and inquiry; but he always found refuge and means of escaping. Lastly, endeavouring to teach his son Icarus the art of flying, the novice, trusting too much to his wings, fell from his towering flight, and was drowned in the sea.

EXPLANATION. - The sense of the fable runs thus. It first enotes envy, which is continually upon the watch, and strangely prevails among excellent artificers; for no kind of people are observed to be more implacably and destructively envious to one another than these.

In the next place, it observes an impolitic and improvident kind of of punishment inflicted upon Dædalus, that of banishment; for good workmen are

gladly received everywhere, so that banishment to an excellent artificer is scarce any punishment at all; whereas other conditions of life cannot easily flourish from home. For the admiration of artists is propagated and increased among foreigners and strangers; it being a principle in the minds of men to slight and despise the mechanical operators of their own nation.

The succeeding part of the fable is plain, concerning the use of mechanic arts, whereto human life stands greatly indebted, as receiving from this treasury numerous particulars for the service of religion, the ornament of civil society, and the whole provision and apparatus of life; but then the same magazine supplies instruments of lust, cruelty, and death: For, not to mention the arts of luxury and debauchery, we plainly see how far the business of exquisite poisons, guns, engines of war, and such kind of destructive inventions, exceeds the cruelty and barbarity of the Minotaur himself.

The addition of the labyrinth contains a beautiful allegory, representing the nature of mechanic arts in general; for all ingenious and accurate mechanical inventions, may be conceived as a labyrinth, which, by reason of their subtilty, intricacy, crossing, and interfering with one another, and the apparent resemblances they have among themselves, scarce any power of the judgment can unravel and distinguish; so that they are only to be understood and traced by the clue of experience.

It is no less prudently added, that he who invented the windings of the labyrinth, should also show the use and management of the clue; for mechanical arts have an ambiguous or double use, and serve as well to produce as to prevent mischief and destruction; so that their virtue almost destroys or unwinds itself.

Unlawful arts, and indeed frequently arts themselves, are persecuted by Minos, that is, by laws, which prohibit and forbid their use among the people; but notwithstanding this, they are hid, concealed, retained, and everywhere find reception and sculking-places; a thing well observed by Tacitus of the astrologers and fortune-tellers of his time. “These,” says he, “are a kind of men that will always be prohibited, and yet will always be retained in our city.”

But lastly, all unlawful and vain arts, of what kind soever, lose their reputation in tract of time; grow contemptible and perish, through their over-confidence, like Icarus; being commonly unable to perform what they boasted. And to say the truth, such arts are better suppressed by their own vain pretensions, than checked or restrained by the bridle of laws.

Chapter XX

Ericthonius, or Imposture Explained of the Improper Use of Force in Natural Philosophy

THE poets feign that Vulcan attempted the chastity of Minerva, and impatient of refusal, had recourse to force; the consequence of which was the birth of Ericthonius, whose body from the middle upwards was comely and well-proportioned, but his thighs and legs small, shrank, and deformed, like an eel. Conscious of this defect, he became the inventor of chariots, so as to show the graceful, but conceal the deformed part of his body.

EXPLANATION. - This strange fable seems to carry this meaning. Art is here represented under the person of Vulcan, by reason of the various uses it makes of fire; and nature under the person of Minerva, by reason of the industry, employed in her works. Art, therefore, whenever it offers violence to nature, in order to conquer, subdue, and bend her to its purpose, by tortures and force of all kinds, seldom obtains the end proposed; yet upon great struggle and application, there proceed certain imperfect births, or lame abortive works, specious in appearance, but weak and unstable in use; which are, nevertheless, with great pomp and deceitful appearances, triumphantly carried about, and shown by impostors. A procedure very familiar, and remarkable in chemical productions, and new mechanical inventions; especially when the inventors rather hug their errors than improve upon these, and go on struggling with nature, not courting her.

Chapter XXI

Deucalion, or Restitution Explained of Useful Hint in Natural Philosophy

THE poets tell us, that the inhabitants of the old world being totally desytroyed by the universal deluge, excepting Deucalion and Pyrrha these two, desiring with zealous and fervent devotion to restore mankind, received this oracle for answer, that “they should succeed by throwing their mother’s bones behind them.” This at first cast them into great sorrow and despair because, as all things were levelled by the deluge, it was in vain to seek their mother’s tomb; but at length they understood the oracle to signify the stones of the earth, which is esteemed the mother of all things.

EXPLANATION. - This fable seems to reveal a secret of nature, and correct an error familiar to the mind; for men’s ignorance leads them to expect the renovation or restoration of things from their corruption and remains, as the phoenix is said to be restored out of its ashes; which is a very improper procedure, because such kind of materials have finished their coarse, and are become absolutely unfit to supply the first rudiments of the same things again; whence, in cases of renovation, recourse should be had to more common principles.

Chapter XXII

Nemesis, or the Vicissitude of Things Explained of the Reserves of Fortune

NEMESIS is represented as a goddess venerated by all, but feared by the powerful and the fortunate. She is said to be the daughter of Nox and Oceanus She is drawn with wings, and a crown; javelin of ash in her right hand; a glass containing Ethiopians in her left; and riding upon a stag.

EXPLANATION. - The fable receives this explanation. The word Nemesis manifestly signifies revenge, or retribution; for the office of this goddess consisted in interposing, like the Roman tribunes, with an “I forbid it,” in all courses of constant and perpetual felicity, so as not only to chastise haughtiness, but also to repay even innocent and moderate happiness with adversity; as if it were decreed, that none of human race should be admitted to the banquet of the gods, but for sport. And, indeed, to read over that chapter of Pliny wherein he has collected the miseries and misfortunes of Augustus Cæsar, whom of all mankind one would judge most fortunate, - as he had a certain art of using and njoying prosperity, with a mind no way tumid, light, effeminate, confused, or melancholic, - one cannot but think this a very great and powerful goddess, who could bring such a victim to her altar.

The parents of this goddess were Oceanus and Nox; that is, the fluctuating change of things, and the obscure and secret divine decrees. The changes of things are aptly represented by the Ocean, on account of its perpetual ebbing end flowing; and secret providence is justly expressed by Night. Even the heathens have observed this secret Nemesis of the night, or the difference betwixt divine and human judgment.

Wings are given to Nemesis, because of the sudden and unforeseen changes of things; for, from the earliest account of time, it has been common for great and prudent men to fall by the dangers they most despised. Thus Cicero, when admonished by Brutus of the infidelity and rancour of Octavius, coolly wrote

back, “I cannot, however, but be obliged to you, Brutus, as I ought, for informing me, though of such a trifle.”

Nemesis also has her crown, by reason of the invidious and malignant nature of the vulgar, who generally rejoice, triumph, and crown her, at the fall of the fortunate and the powerful. And for the javelin in her right hand, it has regard to those whom she has actually struck and transfixed. But whoever escapes her stroke, or feels not actual calamity or misfortune, she affrights with a black and dismal sight in her left hand; for doubtless, mortals on the highest pinnacle of felicity have a prospect of death, diseases, calamities, perfidious friends, undermining enemies, reverses of fortune, &c., represented by the Ehtiopians in her glass. Thus Virgil with great elegance, describing the battle of Actium, says of Cleopatra, .that, “she did not yet perceive the two asps behind her;” but soon: after, which way soever she turned, she saw whole troops of Ethiopians still before her.

Lastly, it is significantly added, that, Nemesis rides upon a stag, which is a very long-lived creature; for perhaps some, by an untimely death in youth, may prevent or escape this goddess, yet they who enjoy a long flow of happiness and power, doubtless become subject to her at length, and are brought to yield.

Chapter XXIII

Achelous, Or Battle Explained Of War By Invasion

THE ancients relate, that Hercules and Achelous being rivals in the courtship of Deianira, the matter was contested by single combat; when Achelous having transformed himself, as he had power to do, into various shapes, by way of trial; at length, in the form of a fierce wild bull, prepares himself for the fight; but Hercules still retains his human shape, engages sharply with him, and in the issue broke off one of the bull's horns; and now Achelous, in great pain and fright, to redeem his. horn, presents Hercules with the cornucopia.

EXPLANATION. - This fable relates to military expeditions and preparations; for the preparation of war on the defensive side, here denoted by Achelous, appears in various shapes, whilst the invading side has but one simple form, consisting either in an army, or perhaps a fleet. But the country that expects the, invasion is employed infinite ways, in fortifying towns, blockading passes, rivers, and ports, raising soldiers, disposing garrisons, building and breaking down bridges, procuring aids, securing provisions, arms, ammunition, &c. So that there appears a new face of things every day and at length, when the country is sufficiently fortified and prepared; it represents to the life the form and threats of a fierce fighting bull.

On the other side, the invader presses on to the fight, fearing to be distressed in an enemy's country. And if after the battle he remains master of the field, and has now broke, as it were, the horn of his enemy, the besieged, of course, retire inglorious, affrighted, and dismay, to their stronghold, there endeavouring to secure themselves, and repair their strength; leaving, at the same time, their country a prey to the conqueror, which is well expressed by the Amalthean horn, or cornucopia.

Chapter XXIV

Dionysus, or, Bacchus. Explained of the Passions

THE fable is, that Semele, Jupiter's mistress, having bound him by an inviolable oath to grant her an unknown request, desired he would embrace her in the same form and manner he used to embrace Juno; and the promise being irrevocable, she was burnt to death with lightning in the performance. The embryo, however, was served up, and carried in Jupiter's thigh till the complete time of its birth; but the burthen thus rendering the father lame, and causing him pain, the child was thence called Dionysus. When born, he was committed, for some years, to be nursed by Proserpina; and when grown up, appeared with so effeminate a face, that his sex seemed somewhat doubtful He also died, and was buried for a time, but afterwards revived. When a youth, he first introduced the cultivation and dressing of vines, the method of preparing wine, and taught the use thereof; whence becoming famous, he subdued the world, even to the utmost bounds of the Indies. He rode in a chariot drawn by tigers. There danced about him certain deformed demons called Cobali, &c. The Muses also joined in his train. He married Ariadne, who was deserted by Theseus. The ivy was sacred to him. He was also held the inventor and instructor of religious rites and ceremonies, but such as were wild, frantic and full of corruption and cruelty. He had also the power of striking men with frenzies. Pentheus and Orpheus were torn to pieces by the frantic women at his orgies; the first for climbing a tree to behold their ceremonies, and the other for the music of his harp. But the acts of this god are much entangled and confounded with those of Jupiter.

EXPLANATION. - This fable seems to contain a little system of morality, so that there is scarce any better invention in all ethics. Under the history of Bacchus is drawn the nature of unlawful desire or affection, and disorder; for the appetite and thirst of apparent good is the mother of all unlawful desire, though ever so destructive, and all unlawful desires are conceived in unlawful wishes or

requests, rashly indulged or granted before they are well understood or considered, and when the affection begins to grow warm, the mother of it (the nature of good) is destroyed and burnt up by the heat. And whilst an unlawful desire lies in the embryo, or unripened in the mind, which is its father, and here represented by Jupiter, it is cherished and concealed, especially in the inferior part of the mind, corresponding to the thigh of the body, where pain twitches and depresses the mind so far as to render its resolutions and actions imperfect and lame. And even after this child of the mind is confirmed, and gains strength by consent and habit, and comes forth into action, it must still be nursed by Proserpina for a time; that is, it skulks and hides its head in a clandestine manner, as it were under ground, till at length, when the checks of shame and fear are removed, and the requisite boldness acquired, it either assumes the pretext of some virtue, or openly despises infamy. And it is justly observed, that every vehement passion appears of a doubtful sex, as having the strength of a man at first, but at last the impotence of a woman. It is also excellently added, that Bacchus died and rose again; for the affections sometimes seem to die and be no more; but there is no trusting them, even though they were buried, being always apt and ready to rise again whenever the occasion or object offers.

That Bacchus should be the inventor of wine carries a fine allegory with it; for every affection is cunning and subtile in discovering a proper matter to nourish and feed it; and of all things known to mortals, wine is the most powerful and effectual for exciting and inflaming passions of all kinds, being indeed like a common fuel to all.

It is again with great elegance observed of Bacchus, that he subdued provinces, and undertook endless expeditions, for the affections never rest satisfied with what they enjoy, but with an endless and insatiable appetite thirst after something further. And tigers are prettily feigned to draw the chariot; for as soon as any affection shall, from going on foot, be advanced to ride, it triumphs over reason, and exerts its cruelty, fierceness, and strength against all that oppose it.

It is also humorously imagined, that ridiculous demons dance and frisk about this chariot; for every passion produces indecent, disorderly, interchangeable, and deformed motions in the eyes, countenance, and gesture, so that the person under the impulse, whether of anger; insult; love, &c., though to, himself he may seem grand, lofty, or obliging, yet in the, eyes of others appears mean, contemptible, or ridiculous.

The Muses also are found in the train of Bacchus, for there is scarce any passion without its art, science, or doctrine to court and flatter it; but in this respect the indulgence of men of genius has greatly detracted from the majesty of the Muses, who ought to be the leaders and conductors of human life, and not the handmaids of the passions.

The allegory of Bacchus falling in love with a cast mistress, is extremely noble; for it is certain that the affections always court and covet what has been rejected upon experience. And all those who by serving and indulging their passions immensely raise the value of enjoyment, should know, that whatever they covet and pursue, whether riches, pleasure, glory, learning, or anything else, they only pursue those things that have been forsaken and cast off with contempt by great numbers in all ages, after possession and experience.

Nor is it without a mystery that the ivy was sacred to Bacchus, and this for two reasons: first, because ivy is an evergreen, or flourishes in the winter; and secondly, because it winds and creeps about so many things, as trees, walls, and buildings, and raises itself above them. As to the first, every passion grows fresh, strong, and vigorous by opposition and prohibition, as it were by a kind of contrast or antiperistasis, like the ivy, in the winter. And for the second, the predominant passion of the mind throws itself, like the ivy, round all human actions, entwines all our resolutions, and perpetually adheres to, and mixes itself among, or even overtops them.

And no wonder that superstitious rites and ceremonies are attributed to Bacchus, when almost every ungovernable passion grows wanton and luxuriant in corrupt religions; nor again, that fury and frenzy should be sent and dealt out by him, because every passion is a short frenzy, and if it be vehement, lasting,

and take deep root, it terminates in madness. And hence the allegory of Pentheus and Orpheus being torn to pieces is evident; for every headstrong passion is extremely bitter, severe, inveterate, and revengeful upon all curious inquiry, wholesome admonition, free counsel and persuasion.

Lastly, the confusion between the persons of Jupiter and Bacchus will justly admit of an allegory, because noble and meritorious actions may sometimes proceed from virtue, sound reason, and magnanimity, and sometimes again from a concealed passion and secret desire of ill, however they may be extolled and praised, insomuch that it is not easy to distinguish betwixt the acts of Bacchus and the acts of Jupiter.

Chapter XXV

Atalanta and Hippomenes, or Gain Explained of the Contest Betwixt Art and Nature

ATALANTA, who was exceeding fleet, contended with Hippomenes in the course, on condition that if Hippomenes won, he should espouse her, or forfeit his life if he lost. The match was very unequal, for Atalanta had conquered numbers, to their destruction. Hippomenes, therefore, had recourse to stratagem. He procured three golden apples, and purposely carried them with him: they started; Atalanta outstripped him soon; then Hippomenes bowled one of his apples before her, across the course, in order not only, to make her stoop, but to draw her out of the path. She, prompted by female curiosity, and the beauty of the golden fruit; starts from the course to take up the apple. Hippomenes, in the mean time, holds on his way, and steps before her; but she, by her natural swiftness, soon fetches up her lost ground, and leaves him again behind. Hippomenes, however, by rightly timing his second and third throw, at length won the race, not by his swiftness, but his cunning.

EXPLANATION. - This fable seems to contain a noble allegory of the contest betwixt art and nature. For art, here denoted by Atalanta, is much swifter, or more expeditious in its operations than nature, when all obstacles and impediments are removed, and sooner arrives at its end. This appears almost in every instance. Thus fruit comes slowly from the kernel, but soon by inoculation or incision; clay, left to itself, is a long time in acquiring a stony hardness, but is presently burnt by fire into brick. So again in human life, nature is a long while in alleviating and abolishing the remembrance of pain, and assuaging the troubles of the mind; but moral philosophy, which is the art of living, performs it presently. Yet this prerogative and singular efficacy of art is stopped and retarded to the infinite detriment of human life, by certain golden apples; for there is no one science or art that constantly holds on its true and proper course

to the end, but they are all continually stopping short, forsaking the track, and turning aside to profit and convenience, exactly like Atalanta. Whence it is no wonder that art gets not the victory over nature, nor, according to the condition of the contest, brings her under subjection; but, on the contrary, remains subject to her, as a wife to a husband.

Chapter XXVI

Prometheus, or the State of Man Explained of an Over-Ruling Providence, and of Human Nature

THE ancients relate that man was the work of Prometheus, and formed of clay; only the artificer mixed in with the mass, particles taken from different animals. And being desirous to improve his workmanship, and endow, as well as create, the human race, he stole up to heaven with a bundle of birch-rods, and kindling them at the chariot of the Sun, thence brought down fire to the earth for the service of men.

They add, that for this meritorious act Prometheus was repayed with ingratitude by mankind, so that, forming a conspiracy, they arraigned both him and his invention before Jupiter. But the matter was otherwise received than they imagined; for the accusation proved extremely grateful to Jupiter and the gods, insomuch that, delighted with the action, they not only indulged mankind the use of fire, but moreover conferred upon them a most acceptable and desirable present, *viz.* perpetual youth.

But men, foolishly overjoyed hereat, laid this present of the gods upon an ass, who, in returning back with it, being extremely thirsty, strayed to a fountain. The serpent, who was guardian thereof; would not suffer him to drink, but upon condition of receiving the burden he carried, whatever it should be. The silly ass complied, and thus the perpetual renewal of youth was, for a drop of water, transferred from men to the race of serpents.

Prometheus, not desisting from his unwarrantable practices, though now reconciled to mankind, after they were thus tricked of their present, but still continuing inveterate against Jupiter, had the boldness to attempt deceit, even in a sacrifice, and is said to have once offered up two bulls to Jupiter, but so as in the hide of one of them to wrap all the flesh and fat of both, and stuffing out the other hide only with the bones; then in a religious and devout manner, gave

Jupiter his choice of the two. Jupiter, detesting this sly fraud and hypocrisy, but having thus an opportunity of punishing the offender, purposely chose the mock bull.

And now giving way to revenge, but finding he could not chastise the insolence of Prometheus without afflicting the human race (in the production whereof Prometheus had strangely and insufferably prided himself), he commanded Vulcan to form a beautiful and graceful woman, to whom every god presented a certain gift, whence she was called Pandora. They put into her hands an elegant box, containing all sorts of miseries and misfortunes; but Hope was placed at the bottom of it. With this box she first goes to Prometheus, to try if she could prevail upon him to receive and open it; but be, being upon his guard, warily refused the offer. Upon this refusal, she comes to his brother Epimetheus, a man of a very different temper, who rashly and inconsiderately opens the box. When finding all kinds of miseries and misfortunes issued out of it, he grew wise too late, and with great hurry and struggle endeavoured to clap the cover on again; but with all his endeavour could scarce keep in Hope, which lay at the bottom.

Lastly, Jupiter arraigned Prometheus of many heinous crimes: as that he formerly stole fire from heaven; that he contemptuously and deceitfully mocked him by a sacrifice of bones; that he despised his present, adding withal a new crime, that he attempted to ravish Pallas: for all which, he was sentenced to be bound in chains, and doomed to perpetual torments. Accordingly, by Jupiter's command, he was brought to Mount Caucasus, and there fastened to a pillar, so firmly that he could no way stir. A vulture or eagle stood by him, which in the daytime gnawed and consumed his liver; but in the night the wasted parts were supplied again; whence matter for his pain was never wanting.

They relate, however, that his punishment had an end; for Hercules sailing the ocean, in a cup, or pitcher, presented him by the Sun, came at length to Caucasus, shot the eagle with his arrows, and set Prometheus free. In certain nations, also, there were instituted particular games of the torch, to the honour of Prometheus, in which they who ran for the prize carried lighted torches; and as

any one of these torches happened to go out, the bearer withdrew himself, and gave way to the next; and that person was allowed to win the prize who first brought in his lighted torch to the goal.

EXPLANATION. - This fable contains and enforces many just, and serious considerations; some whereof have been long since well observed, but some again remain perfectly untouched. Prometheus clearly and expressly signifies Providence; for of all the things in nature, the formation and endowment of man was singled out by the ancients, and esteemed the peculiar work of Providence. The reason hereof seems, 1. That the nature of man includes a mind and understanding, which is the seat of Providence. 2. That it is harsh and incredible to suppose reason and mind should be raised, and drawn out of senseless and irrational principles; whence it becomes almost inevitable, that providence is implanted in the human mind in conformity with, and by the direction and the design of the greater over-ruling Providence. But, 3. The principal cause is this: that man seems to be the thing in which the whole world centres, with respect to final causes; so that if he were away, all other things would stray and fluctuate, without end or intention, or become perfectly disjointed, and out of frame; for all. things are made subservient to man, and he receives use and benefit from them all. Thus the revolutions, places, and periods, of the celestial bodies, serve him for distinguishing times and seasons, and for dividing the world into different regions; the meteors afford him prognostications of the weather; the winds sail our ships, drive our mills, and move our machines; and the vegetables and animals of all kinds either afford us matter for houses and habitations, clothing, food, physic, or tend to ease, or delight, to support, or refresh us: so that everything in nature seems not made for itself, but for man.

And it is not without reason added, that the mass of matter whereof man was formed, should be mixed up with particles taken from different animals, and wrought in with the clay, because it is certain, that of all things in the universe, man is the most compounded and recompounded body; so that the ancients not improperly styled him a Microcosm, or little world within himself. For although the chemists have absurdly, and too literally, wrested and perverted the elegance

of the term microcosm, whilst they pretend to find all kind of mineral and vegetable matters, or something corresponding to them, in man, yet it remains firm end unshaken, that the human body is of all substances the most mixed and organical; whence it has surprising powers end faculties: for the powers of simple bodies are but few, though certain and quick; as being little broken, or weakened, and not counterbalanced by mixture: but excellence and quantity of energy reside in mixture and composition.

Man, however, in his first origin, seems to be a defenceless naked creature, slow in assisting himself, and standing in need of numerous things. Prometheus, therefore, hastened to the invention of fire, which supplies and administers to nearly all human uses and necessities, insomuch that, if the soul may be called the form of forms, if the hand may be called the instrument of instruments, fire may, as properly, be called the assistant of assistants, or the helper of helps:; for hence proceed numberless operations, hence all the mechanic arts, and hence infinite assistances are afforded to the sciences themselves.

The manner wherein Prometheus stole this fire is properly described from the nature of the thing; he being said to have done it by applying a rod of birch to the chariot of the Sun: for birch is used in striking and beating, which clearly denotes the generation of fire to be from the violent percussions and collisions of bodies; whereby the matters struck are subtilized, rarefied, put into motion, and so prepared to receive the heat of the celestial bodies; whence they, in clandestine and secret manner, collect and snatch fire, as it were by stealth, from the chariot of the Sun.

The next is a remarkable part of the fable, which represents that men, instead of gratitude and thanks, fell into indignation and expostulation, accusing both Prometheus ad his fine to Jupiter, - and yet the accusation proved highly pleasing to Jupiter; so that he, for this reason, crowned these benefits of mankind with a new bounty. Here it may seem strange that the sin of ingratitude to a creator and benefactor, a sin so heinous as to include almost all others, should meet with approbation and reward. But the allegory has another view, and denotes, that the accusation and arraignment, both of human nature and human art among

mankind, proceeds from a most noble and laudable temper of the mind, and tends to a very good purpose; whereas the contrary temper is odious to the gods, and unbeneficial in itself. For they who break into extravagant praises of human nature, and the arts in vogue, and who lay themselves out in admiring the things they already possess, and will needs have the sciences cultivated among them, to be thought absolutely perfect and complete, in the first place, show little regard to the divine nature, whilst they extol their own inventions almost as high as his perfection. In the neat place, men of this temper are unserviceable and prejudicial in life, whilst they imagine themselves already got to the top of things, and there rest, without farther inquiry. On the contrary, they who arraign and accuse both nature and art, and are always full of complaints against them, not only preserve a more just and modest sense of mind, but are also perpetually stirred up to fresh industry and new discoveries. Is not, then, the ignorance and fatality of mankind to be extremely pitied, whilst they remain slaves to the arrogance of a few of their own fellows, and are dotingly fond of that scrap of Grecian knowledge, the Peripatetic philosophy; and this to such a degree, as not only to think all accusation or arraignment thereof useless, but even hold it suspect and dangerous? Certainly the procedure of Empedocles, though furious - but especially that of Democritus (who with great modesty complained that all things were abstruse; that we know nothing; that truth lies hid in deep pits; that falsehood is strangely joined and twisted along with truth, &c} - is to be preferred before the confident, assuming, and dogmatical school of Aristotle. Mankind are, therefore, to be admonished, that the arraignment of nature and of art is pleasing to the gods; and that a sharp and vehement accusation of Prometheus, though a creator, a founder, and a master, obtained new blessings and presents from the divine bounty, and proved more sound and serviceable than a diffusive harangue of praise and gratulation. And let men be assured, that the fond opinion that they have already acquired enough, is a principal reason why they have acquired so little.

That the perpetual flower of youth should be the present which mankind received as a reward for their accusation, carries this moral: that the ancients

seem not to have despaired of discovering methods, and remedies, for retarding old age, and prolonging the period of human life, but rather reckoned it among those things which, through sloth and want of diligent inquiry, perish and come to nothing, after having been once undertaken, than among such as are absolutely impossible, or placed beyond the reach of the human power. For they signify and intimate from the true use of fire, and the just and strenuous accusation and conviction of the errors of art, that the divine bounty is not wanting to men in such kind of presents, but that men indeed are wanting to themselves, and lay such an inestimable gift upon the back of a slow-paced ass; that is, upon the back of the heavy, dull, lingering thing, experience; from whose sluggish and tortoise-pace proceeds that ancient complaint of the shortness of life, and the slow advancement of arts. And certainly it may well seem, that the two faculties of reasoning and experience arts not hitherto properly joined and coupled together, but to be still new gifts of the gods, separately laid, the one upon the back of a light bird, or abstract philosophy, and the other upon an ass, or slow-paced practice and trial. And yet good hopes might be conceived of this ass, if it were not for his thirst and the accidents of the way. For we judge, that if any one would constantly proceed, by a certain law and method, in the road of experience, and not by the way thirst after such experiments as make for profit or ostentation, nor exchange his burden, or quit the original design for the sake of these, he might be an useful bearer of a new and accumulated divine bounty to mankind.

That this gift of perpetual youth should pass from men to serpents, seems added by way of ornament, and illustration to the fable; perhaps intimating, at the same time, the shame it is for men, that they, with their fire, and numerous arts, cannot procure to themselves those things which nature has bestowed upon many other creatures.

The sudden reconciliation of Prometheus to mankind, after being disappointed of their hopes, contains a prudent and useful admonition. It points out the levity and temerity of men in new experiments, when, not presently

succeeding, or answering to expectation, they precipitantly quit their new undertakings, hurry back to their old ones, and grow reconciled thereto.

After the fable has described the state of man, with regard to arts and intellectual matters, it passes on to religion; for after the inventing and settling of arts, follows the establishment of divine worship, which hypocrisy presently enters into and corrupts. So that by the two sacrifices we have elegantly painted the person of a man truly religious, and of an hypocrite. One of these sacrifices contained the fat, or the portion of God, used for burning and incensing; thereby denoting affection and zeal, offered up to his glory. It likewise contained the bowels, which are expressive of charity, along with the good and useful flesh. But the other contained nothing more than dry bones, which nevertheless stuffed out the hide, so as to make it resemble a fair, beautiful, and magnificent sacrifice; hereby finely denoting the external and empty rites and barren ceremonies, wherewith men burden and stuff out the divine worship, - things rather intended for show and ostentation than conducing to piety: - Nor are mankind simply content with this mock-worship of God, but also impose and father it upon him, as if he had chosen and ordained it. Certainly the prophet, in the person of God, has a fine expostulation, as to this matter of choice - “Is this the fasting which I have chosen, that a man should afflict his soul for a day, and bow down his head like a bulrush?”

After thus touching the state of religion, the fable next turns to manners, and the conditions of human life. And though it be a very common, yet is it a just interpretation, that Pandora denotes the pleasures and licentiousness which the cultivation and luxury of the arts of civil life introduce, as it were, by the instrumental efficacy of fire; whence the works of the voluptuary arts are properly attributed to Vulcan, the God of Fire. And hence infinite miseries and calamities have proceeded to the minds, the bodies, and the fortunes of men, together with a late repentance; and this not only in each man’s particular, but also in kingdoms and states; for wars, and tumults, and tyrannies, have all arisen from this same fountain, or box of Pandora.

It is worth observing, how beautifully and elegantly the fable has drawn two reigning characters in human life, and given two examples, or tablatures of them, under the persons of Prometheus and Epimetheus. The followers of Epimetheus are improvident, see not far before them, and prefer such things as are agreeable for the present; whence they are oppressed with numerous straits, difficulties; and calamities, with which they almost continually struggle; but in the mean time gratify their own temper, and, for want of a better knowledge of things, feed their minds with many vain hopes; and as with so many pleasing dreams, delight themselves, and sweeten the miseries of life.

But the followers of Prometheus are the prudent, wary men, that look into futurity, and cautiously guard against, prevent, and undermine many calamities and misfortunes. But this watchful, provident temper, is attended with a deprivation of numerous pleasures, and the loss of various delights, whilst such men debar themselves the use even of innocent things, and what is still worse, rack and torture themselves with cares, fears, and disquiets; being bound fast to the pillar of necessity, and tormented with numberless thoughts (which for their swiftness are well compared to an eagle), that continually wound, tear, and gnaw their liver or mind, unless, perhaps, they find some small remission by intervals, or as it were at nights; but then new anxieties, dreads, and fears, soon return again, as it were in the morning. And, therefore, very few men, of either temper, have secured to themselves the advantages of providence, and kept clear of disquiets, troubles, and misfortunes.

Nor indeed can any man obtain this end without the assistance of Hercules; that is, of such fortitude and constancy of mind as stands prepared against every event, and remains indifferent to every change; looking forward without being daunted, enjoying the good without disdain, and enduring the bad without impatience. And it must be observed, that even Prometheus had not the power to free himself, but owed his deliverance to another; for no natural inbred force and fortitude could prove equal to such a task. The power of releasing him came from the utmost confines of the ocean, and from the sun; that is, from Apollo, or knowledge; and again, from a due consideration of the uncertainty, instability,

and fluctuating state of human life, which is aptly represented by sailing the ocean. Accordingly, Virgil has prudently joined these two together, accounting him happy who knows the causes of things, and has conquered all his fears, apprehensions, and superstitions.

It is added; with great elegance, for supporting and confirming the human mind, that the great hero who thus delivered him sailed the ocean in a cup, or pitcher, to prevent fear, or complaint; as if, through the narrowness of our nature, or a too great fragility thereof, we were absolutely incapable of that fortitude and constancy to which Seneca, finely alludes, when he says, “It is a noble thing, at once to participate in the frailty of man and the security of a god.”

We have hitherto, that we might not break the connection of things, designedly omitted the last crime of Prometheus - that of attempting the chastity of Minerva - which heinous offence it doubtless was, that caused the punishment of having his liver gnawed by the vulture. The meaning seems to be this, that when men are puffed up with arts and knowledge, they often try to subdue even the divine wisdom and bring it under the dominion of sense and reason, whence inevitably follows a perpetual and restless rending and tearing of the mind. A sober and humble distinction must, therefore, be made betwixt divine and human things, and betwixt the oracles of sense and faith, unless mankind had rather choose an heretical religion, and a fictitious and romantic philosophy.

The last particular in the fable is the Games of the Torch, instituted to Prometheus, which again relates to arts and sciences, as well as the invention of fire, for the commemoration and celebration whereof three games were held. And here we have an extremely prudent admonition, directing us to expect the perfection of the sciences from succession, and not from the swiftness and abilities of any single person; for he who is fleetest and strongest in the course may perhaps be less fit to keep his touch a-light, since there is danger of its going out from too rapid as well as from too slow a motion.

But this kind of contest, with the torch, seems to have been long dropped and neglected; the sciences appearing to have flourished principally in their first authors, as Aristotle, Galen, Euclid, Ptolemy, &c.; whilst their successors have

done very little, or scarce made any attempts. But it were highly to be wished that these games might be renewed, to the honour of Prometheus, or human nature, and that they might excite contest, emulation, and laudable endeavours, and the design meet with such success as not to hang tottering, tremulous, and hazarded, upon the torch of any single person. Mankind, therefore, should be admonished to rouse themselves, and try and exert their own strength and chance, and, not place all their dependence upon a few men, whose abilities and capacities, perhaps, are not greater than their own.

These are the particulars which appear to us shadowed out by this trite and vulgar fable, though without denying that there may be contained in it several intimations that have a surprising correspondence with the Christian mysteries. In particular, the voyage of Hercules; made in a pitcher, to release Prometheus, bears an allusion to the word of God, coming in the frail vessel of the flesh to redeem mankind. But we indulge ourselves no such liberties as these, for fear of using strange fire at the altar of the Lord.

Chapter XXVII

Icarus and Scylla and Charybdis, or the Middle Way Explained of Mediocrity in Natural and Moral Philosophy

MEDIOCRITY, or the holding a middle course, has been highly extolled in morality, but little in matters of science, though no less useful and proper here; whilst in politics it is held suspected, and ought to be employed with judgment. The ancients described mediocrity in manners by the course prescribed to Icarus; and in matters of the understanding by the steering betwixt Scylla and Charybdis, on account of the great difficulty and danger in passing those straits.

Icarus, being to fly across the sea, was ordered by his father neither to soar too high nor fly too low, for, as his wings were fastened together with wax, there was danger of its melting by the sun's heat in too high a flight, and of its becoming less tenacious by the moisture if he kept too near the vapour of the sea. But he, with a juvenile confidence, soared aloft, and fell down headlong.

EXPLANATION. - The fable is vulgar, and easily interpreted; for the path of virtue lies straight between excess on the one side, and defect on the other. And no wonder that excess should prove the bane of Icarus, exulting in juvenile strength and vigour; for excess is the natural vice of youth, as defect is that of old age; and if a man must perish by either, Icarus chose the better of the two; for all defects are justly esteemed more depraved than excesses. There is some magnanimity in excess, that, like a bird, claims kindred with the heavens; but defect is a reptile, that basely crawls upon the earth. It was excellently said by Heraclitus, "A dry light makes the best soul;" for if the soul contracts moisture from the earth, it perfectly degenerates and sinks. On the other hand, moderation must be observed, to prevent this fine light from burning, by its too great subtilty and dryness. But these observations are common.

In matters of the understanding, it requires great skill and a particular felicity to steer clear of Scylla and Charybdis. If the ship strikes upon Scylla; it is dashed

in pieces against the rocks; if upon Charybdis, it is swallowed outright. This allegory is pregnant with matter; but we shall only observe the force of it lies here, that a mean be observed in every doctrine and science, and in the rules and axioms thereof, between the rocks of distinctions and the whirlpools of universalities; for these two are the bane and shipwreck of fine geniuses and arts.

Chapter XXVIII

Sphinx, or Science Explained of the Sciences

THEY relate that Sphinx was a monster, variously formed, having the face and voice of a virgin, the wings of a bird, and the talons of a griffin. She resided on the top of a mountain, near the city Thebes, and also beset the highways. Her manner was to lie in ambush and seize the travellers, and having them in her power, to propose to them certain dark and perplexed riddles, which it was thought she received from the Muses, and if her wretched captives could not solve and interpret these riddles, she with great cruelty fell upon them, in their hesitation and confusion, and tore them to pieces. This plague having reigned a long time, the Thebans at length offered their kingdom to the men who could interpret her riddles, there being no other way to subdue her. Œdipus, a penetrating and prudent man, though lame in his feet, excited by so great a reward, accepted the condition, and with a good assurance of mind, cheerfully presented himself before the monster, who directly asked him, “What creature that was, which being born four-footed, afterwards became two-footed, then three-footed, and lastly four-footed again?” Œdipus, with presence of mind, replied it was man, who, upon his first birth and infant state, crawled upon all fours in endeavouring to walk; but not long after went upright upon his two natural feet; again, in old age walked three-footed, with a stick; and at last, growing decrepit, lay four-footed confined to his bed; and having by this exact solution obtained the victory, he slew the monster, and, laying the carcass upon an ass, led her away in triumph; and upon this he was, according to the agreement, made king of Thebes.

EXPLANATION. - This is an elegant, instructive fable, and seems invented to represent science, especially as joined with practice. For science may, without absurdity, be called a monster, being strangely gazed at and admired by the ignorant and unskilful. Her figure and form is various, by reason of the vast

variety of subjects that science considers; her voice and countenance are represented female, by reason of her gay appearance, and volubility of speech; wings are added, because the sciences and their inventions run and fly about in a moment, for knowledge, like light communicated from one torch to another, is presently caught and copiously diffused; sharp and hooked talons are elegantly attributed to her, because the, axioms and arguments of science enter the mind, lay hold of it, fix it down, and keep it from moving or slipping away. This the sacred philosopher observed when he said, “The words of the wise are like goads or nails driven far in.” Again, all science seems placed on high, as it were on the tops of mountains that are hard to climb; for science is justly imagined a sublime and lofty thing, looking down upon ignorance, from an eminence, and at the same time taking an extensive view on all sides, as is usual on the top of mountains. Science is said to beset the highways, because through all the journey and peregrination of human life there is matter and occasion offered of contemplation.

Sphinx is said to propose various difficult questions and riddles to men, which she received from the Muses; and these questions, so long as they remain with the Muses, may very well be unaccompanied with severity, for while there is no other end of contemplation and inquiry but that of knowledge alone, the understanding is not oppressed, or driven to straits and difficulties, but expatiates and ranges at large, and even receives a degree of pleasure from doubt and variety; but after the Muses have given over their riddles to Sphinx, that is, to practice, which urges and impels to action, choice, and determination, then it is that they become torturing, severe, and trying, and, unless solved and interpreted, strangely perplex and harass the human mind, rend it every way, and perfectly tear it to pieces. All the riddles of Sphinx, therefore, leave two conditions annexed, viz., dilaceration to those who do not solve them, and empire to those that do. For he who understands the thing proposed obtains his end, and every artificer rules over his work.

Sphinx has no more than two kinds of riddles, one relating to the nature of things, the other to the nature of man; and correspondent to these, the prizes of

the solution are two kinds of empire, the empire over nature, and the empire over man. For the true and ultimate end of natural philosophy is dominion over natural things, natural bodies, remedies, machines, and numberless other particulars, though the schools, contented with what spontaneously offers, and swollen with their own discourses, neglect, and in a manner despise, both things and works.

But the riddle proposed to Œdipus, the solution whereof acquired him the Theban kingdom, regarded the nature of man; for he who has thoroughly looked into and examined human nature, may in a manner command his own fortune, and seems born to acquire dominion and rule. Accordingly, Virgil properly makes the arts of government to be the arts of the Romans.] It was, therefore, extremely apposite in Augustus Cæsar to use the image of Sphinx in his signet, whether this happened by accident or by design; for he of all men was deeply versed in politics, and through the course of his life very happily solved abundance of new riddles with regard to the nature of man; and unless he had done this with great dexterity and ready address, he would frequently have been involved in imminent danger, if not destruction.

It is with the utmost elegance added in the fable, that when Sphinx was conquered, her carcass was laid upon an ass; for there is nothing so subtile and abstruse, but after being once made plain, intelligible, and common, it may be received by the slowest capacity.

We must not omit that Sphinx was conquered by a lame man, and impotent in his feet; for men usually make too much haste to the solution of Sphinx's riddles; whence it happens, that she prevailing, their minds are rather racked and torn by disputes, than invested with command by works and effects.

Chapter XXIX

Proserpine, or Spirit Explained of the Spirit Included in Natural Bodies

THEY tell us, Pluto having, upon that memorable division of empire among the gods, received the infernal regions for his share, despaired of winning any one of the goddesses in marriage by an obsequious courtship, and therefore through necessity resolved upon a rape. Having watched his opportunity, he suddenly seized upon Proserpine, a most beautiful virgin, the daughter of Ceres, as she was gathering narcissus flowers in the meads of Sicily, and hurrying her to his chariot, carried her with him to the subterraneal regions, where she was treated with the highest reverence, and styled the Lady of Dis. But Ceres missing her only daughter, whom she extremely loved, grew pensive and anxious beyond measure, and taking a lighted torch in her hand, wandered the world over in quest of her daughter, but all to no purpose, till, suspecting she might be carried to the infernal regions, she, with great lamentation and abundance of tears, importuned Jupiter to restore her; and with much ado prevailed so far as to recover and bring her away, if she had tasted nothing there. This proved a hard condition upon the mother, for Proserpine was found to have eaten three kernels of a pomegranate. Cares, however, desisted not, but fell to her entreaties and lamentations afresh, insomuch that at last it was indulged her that Proserpine should divide the year betwixt her husband and her mother, and live six months with the one and as many with the other. After this; Theseus and Perithous, with uncommon audacity, attempted to force Proserpine away from Pluto’s bed, but happening to grow tired in their journey, and resting themselves upon a stone in the realms below, they could never rise from it again, but remain sitting there for ever. Proserpine, therefore, still continued queen of the lower regions, in honour of whom there was also added this grand privilege, that though it had never been permitted any one to return after having once descended thither, a particular exception was made, that he who brought a golden bough as a present to

Proserpine, might on that condition descend and return. This was an only bough that grew in a large dark grove, not from a tree of its own, but like the mistletoe, from another, and when plucked away a fresh one always shot out in its stead.

EXPLANATION. - This fable seems to regard natural philosophy, and searches deep into that rich and fruitful virtue and supply in subterraneous bodies, from whence all the things upon the earth's surface spring, and into which they again relapse and return. By Proserpine the ancients denoted that ethereal spirit shut up and detained within the earth, here represented by Pluto, the spirit being separated from the superior globe, according to the expression of the poet. This spirit is conceived as ravished, or snatched up by the earth, because it can no way be detained, when it has time and opportunity to fly off, but is only wrought together and fixed by sudden intermixture and comminution, in the same manner as if one should endeavour to mix air with water, which cannot otherwise be done than by a quick and rapid agitation, that joins them together in froth whilst the air is thus caught up by the water. And it is elegantly added, that Proserpine was ravished whilst she gathered narcissus flowers, which have their name from numbedness or stupefaction; for the spirit we speak of is in the fittest disposition to be embraced by terrestrial matter when it begins to coagulate, or grow torpid as it were.

It is an honour justly attributed to Proserpine, and not to any other wife of the gods, that of being the lady or mistress of her husband, because this spirit performs all its operations in the subterraneal regions, whilst Pluto, or the earth, remains stupid, or as it were ignorant of them.

The æther, or the efficacy of the heavenly bodies, denoted by Ceres, endeavours with infinite diligence to force out this spirit, and restore it to its pristine state. And by the torch in the hand of Ceres, or the nether, is doubtless meant the sun, which disperses light over the whole globe of the earth, and if the thing were possible, must have the greatest share in recovering Proserpine, or reinstating the subterraneal spirit. Yet Proserpine still continues and dwells below, after the manner excellently described in the condition betwixt Jupiter and Ceres. For first, it is certain that there are two ways of detaining the spirit, in

solid and terrestrial matter, - the one by condensation or obstruction, which is mere violence and imprisonment; the other by administering a proper alignment, which in spontaneous and free. For after the included spirit begins to feed and nourish itself; it is not in a hurry to fly off, but remains as it were fixed in its own earth. And this is the moral of Proserpine's tasting the pomegranate; and were it not for this, she must long ago have been carried up by Ceres, who with her torch wandered the world over, and so the earth have been left without its spirit. For though the spirit in metals and minerals may perhaps be, after a particular manner, wrought in by the solidity of the mass, yet the spirit of vegetables and animals has open passages to escape at, unless it be willingly detained, in the way of sipping and tasting them.

The second article of agreement, that of Proserpine's remaining six months with her mother and six with her husband, is an elegant description of the division of the year; for the spirit diffused through the earth lives above-ground in the vegetable world during the summer months, but in the winter returns underground again.

The attempt of Theseus and Perithous to bring Proserpine away, denotes that the more subtile spirits, which descend in many bodies to the earth, may frequently be unable to drink in, unite with themselves, and carry off the subterraneous spirit, but on the contrary be coagulated by it, and rise no more, so as to increase the inhabitants and add to the dominion of Proserpine.

The alchemists will be apt to fall in with our interpretation of the golden bough, whether we will or no, because they promise golden mountains, and the restoration of natural bodies from their stone, as from the gates of Pluto; but we are well assured that their theory has no just foundation, and suspect they have no very encouraging or practical proofs of its soundness. Leaving, therefore, their conceits to themselves, we shall freely declare our own sentiments upon this last part of the fable. We are certain, from numerous figures and expressions of the ancients, that they judged the conservation, and in some degree the renovation, of natural bodies to be no desperate or impossible thing, but rather abstruse and out of the common road than wholly impracticable. And this seems

to be their opinion in the present case, as they have placed this bough among an infinite number of shrubs, in a spacious and thick wood. They supposed it of gold, because gold is the emblem of duration. They feigned it adventitious, not native, because such an effect is to be expected from art, and not from any medicine or any simple or mere natural way of working.

Chapter XXX

Metis, or Counsel Explained of Princes and their Council

THE ancient poets relate that Jupiter took Metis to wife, whose name plainly denotes counsel, and that he, perceiving she was pregnant by him, would by no means wait the time of her delivery, but directly devoured her; whence himself also became pregnant, and was delivered in a wonderful manner; for he from his head or brain brought forth Pallas armed.

EXPLANATION. - This fable, which in its literal sense appears monstrously absurd, seems to contain a state secret, and shows with what art kings usually carry themselves towards their council, in order to preserve their own authority and majesty not only inviolate, but so as to have it magnified and heightened among the people. For kings commonly link themselves as it were in a nuptial bond to their council, and deliberate and communicate with them after a prudent and laudable custom upon matters of the greatest importance, at the same time justly conceiving this no diminution of their majesty; but when the matter once ripens to a decree or order, which is a kind of birth, the king then suffers the council to go on no further, lest the act should seem to depend upon their pleasure. Now, therefore, the king usually assumes to himself whatever was wrought, elaborated, or formed, as it were, in the womb of the council (unless it be a matter of an invidious nature, which he is sure to put from him), so that the decree and the execution shall seem to flow from himself. And as this decree or execution proceeds with prudence and power, so as to imply necessity, it is elegantly wrapt up under the figure of Pallas armed.

Nor are kings content to have this seem the effect of their own authority, free will, and uncontrollable choice, unless they also take the whole honour to themselves, and make the people imagine that, all good and wholesome decrees proceed entirely from their own head, that is, their own sole prudence and judgment.

Chapter XXXI

The Sirens, or Pleasures Explained of Men's Passion for Pleasures

INTRODUCTION - The fable of the Sirens is, in a vulgar sense, justly enough explained of the pernicious incentives to pleasure ; but the ancient mythology seems to us like a vintage ill-pressed and trod; for though something has been own from it, yet all the more excellent parts remain behind in the grapes that are untouched.

FABLE - The Sirens are said to be the daughters of Achelous and Terpsichore, one of the Muses. In their early days they had wings, but lost them upon being conquered by the Muses, with whom they rashly contended; and with the feathers of these wings the Muses made themselves crowns, so that from this time the Muses wore wings on their heads, excepting only the mother to the Sirens.

These Sirens resided in certain pleasant islands, and when, from their watch-tower, they saw any ship approaching, they first detained the sailors by their music, then, enticing then to shore, destroyed them.

Their singing was not of one and the same kind, but they adapted their tunes exactly to the nature of each person, in order to captivate and secure him. And so destructive had they been, that these islands of the Sirens appeared, to a very great distance, white with the bones of their unburied captives.

Two different remedies were invented to protect persons against them, the one by Ulysses, the other by Orpheus. Ulysses commanded his associates to stop their ears close with wax; and he, determining to make the trial, and yet avoid the danger, ordered himself to be tied fast to a mast of the ship, giving strict charge not to be unbound, even though himself should entreat it; but Orpheus, without any binding at all, escaped the danger by loudly chanting to his harp the praises of the gods, whereby he drowned the voices of the Sirens.

EXPLANATION. - This fable is of the moral kind, and appears no less elegant than easy to interpret. For pleasures proceed from plenty and affluence, attended with activity or exultation of the mind. Anciently their first incentives were quick, and seized upon men as if they had been winged, but learning and philosophy afterwards prevailing, had at least the power to lay the mind under some restraint, and make it consider the issue of things, and thus deprived pleasures of their wings.

This conquest redounded greatly to the honour and ornament of the Muses; for after it appeared, by the example of a few, that philosophy could introduce a contempt of pleasures, it immediately seemed to be a sublime thing that could raise and elevate the soul, fixed in a manner down to the earth, and thus render men's thoughts, which reside in the head, winged as it were, or sublime.

Only the mother of the Sirens was not thus plumed on the head, which doubtless denotes superficial learning invented and used for delight end levity; an eminent example whereof we have in Petronius, who, after receiving sentence of death, still continued his gay frothy humour, and, as Tacitus observes, used his learning to solace or divert himself; and instead of such discourses as give firmness and constancy of mind, read nothing but loose poems and verses. Such learning as this seems, to pluck the crowns again from the Muses' heads, and restore them to the Sirens.

The Sirens are said to inhabit certain islands, because pleasures generally seek retirement, and often shun society. And for their songs, with the manifold artifice and destructiveness thereof, this is too obvious and common to need explanation. But that particular of the bones stretching like white cliffs along the shores, and appearing afar off, contains a more subtile allegory, and denotes that the examples of others' calamity and misfortunes, though ever so manifest and apparent, a have yet but little force to deter the corrupt nature of man from pleasures.

The allegory of the remedies against the Sirens is not difficult, but very wise and noble: it proposes, in effect, three remedies, as well against subtile as violent mischiefs, two drawn from philosophy and one from religion.

The first means of escaping is to resist the earliest temptation in the beginning, and diligently avoid and cut off all occasions that may solicit or sway the mind; and this is well represented by shutting up the ears, a kind of remedy to be necessarily used with mean and vulgar minds, such as the retinue of Ulysses.

But nobler spirits may converse, even in the midst of pleasures, if the mind be well guarded with constancy and resolution. And thus some delight to make a severe trial of their own virtue, and thoroughly acquaint themselves with the folly and madness of pleasures, without complying or being wholly given up to them; which is what Solomon professes of himself when he closes the account of all the numerous pleasures he gave a loose to, with this expression, “But wisdom still continued with me.” Such heroes in virtue may, therefore, remain unmoved by the greatest incentives to pleasure, and stop themselves on the very precipice of danger; if, according to the example of Ulysses, they turn a deaf ear to pernicious counsel, and the flatteries of their friends and companions, which have the greatest power to shake and unsettle the mind.

But the most excellent remedy, in every temptation, is that of Orpheus, who, by loudly chanting and resounding the praises of the gods, confounded the voices, and kept himself from hearing the music of the Sirens; for divine contemplations exceed the pleasures of sense, not only in power but also in sweetness.

Instauratio Magna

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Proem

Francis of Verulam reasoned thus with himself and judged it to be for the interest of the present and future generations that they should be made acquainted with his thoughts.

Being convinced that the human intellect makes its own difficulties, not using the true helps which are at man's disposal soberly and judiciously — whence follows manifold ignorance of things, and by reason of that ignorance mischiefs innumerable — he thought all trial should be made, whether that commerce between the mind of man and the nature of things, which is more precious than anything on earth, or at least than anything that is of the earth, might by any means be restored to its perfect and original condition, or if that may not be, yet reduced to a better condition than that in which it now is. Now that the errors which have hitherto prevailed, and which will prevail for ever, should (if the mind be left to go its own way) either by the natural force of the understanding or by help of the aids and instruments of logic, one by one, correct themselves, was a thing not to be hoped for, because the primary notions of things which the mind readily and passively imbibes, stores up, and accumulates (and it is from them that all the rest flow) are false, confused, and overhastily abstracted from the facts; nor are the secondary and subsequent notions less arbitrary and inconstant; whence it follows that the entire fabric of human reason which we employ in the inquisition of nature is badly put together and built up, and like some magnificent structure without any foundation. For while men are occupied in admiring and applauding the false powers of the mind, they pass by and throw away those true powers, which, if it be supplied with the proper aids and can itself be content to wait upon nature instead of vainly affecting to overrule her, are within its reach. There was but one course left, therefore — to try the whole thing anew upon a better plan, and to commence a total reconstruction of sciences, arts, and all human knowledge, raised upon the proper foundations. And this, though in the project and undertaking it may seem a thing infinite and

beyond all the powers of man, yet when it comes to be dealt with it will be found sound and sober, more so than what has been done hitherto. For of this there is some issue; whereas in what is now done in the matter of science there is only a whirling round about, and perpetual agitation, ending where it began. And although he was well aware how solitary an enterprise it is, and how hard a thing to win faith and credit for, nevertheless he was resolved not to abandon either it or himself, nor to be deterred from trying and entering upon that one path which is alone open to the human mind. For better it is to make a beginning of that which may lead to something, than to engage in a perpetual struggle and pursuit in courses which have no exit. And certainly the two ways of contemplation are much like those two ways of action, so much celebrated, in this — that the one, arduous and difficult in the beginning, leads out at last into the open country, while the other, seeming at first sight easy and free from obstruction, leads to pathless and precipitous places.

Moreover, because he knew not how long it might be before these things would occur to anyone else, judging especially from this, that he has found no man hitherto who has applied his mind to the like, he resolved to publish at once so much as he has been able to complete. The cause of which haste was not ambition for himself, but solicitude for the work; that in case of his death there might remain some outline and project of that which he had conceived, and some evidence likewise of his honest mind and inclination toward the benefit of the human race. Certain it is that all other ambition whatsoever seemed poor in his eyes compared with the work which he had in hand, seeing that the matter at issue is either nothing or a thing so great that it may well be content with its own merit, without seeking other recompense.

Epistle Dedicatory

TO OUR MOST GRACIOUS AND MIGHTY PRINCE AND LORD

JAMES,
BY THE GRACE OF GOD
OF GREAT BRITAIN, FRANCE, AND IRELAND KING, DEFENDER OF THE FAITH, ETC.

Most Gracious and Mighty King, Your Majesty may perhaps accuse me of larceny, having stolen from your affairs so much time as was required for this work. I know not what to say for myself. For of time there can be no restitution unless it be that what has been abstracted from your business may perhaps go to the memory of your name and the honor of your age; if these things are indeed worth anything. Certainly they are quite new, totally new in their very kind: and yet they are copied from a very ancient model, even the world itself and the nature of things and of the mind. And to say truth, I am wont for my own part to regard this work as a child of time rather than of wit, the only wonder being that the first notion of the thing, and such great suspicions concerning matters long established, should have come into any man's mind. All the rest follows readily enough. And no doubt there is something of accident (as we call it) and luck as well in what men think as in what they do or say. But for this accident which I speak of, I wish that if there be any good in what I have to offer, it may be ascribed to the infinite mercy and goodness of God, and to the felicity of your Majesty's times; to which as I have been an honest and affectionate servant in my life, so after my death I may yet perhaps, through the kindling of this new light in the darkness of philosophy, be the means of making this age famous to posterity; and surely to the times of the wisest and most learned of kings belongs of right the regeneration and restoration of the sciences. Lastly, I have a request to make — a request no way unworthy of your Majesty, and which especially

concerns the work in hand, namely, that you who resemble Solomon in so many things — in the gravity of your judgments, in the peacefulness of your reign, in the largeness of your heart, in the noble variety of the books which you have composed — would further follow his example in taking order for the collecting and perfecting of a natural and experimental history, true and severe (unincumbered with literature and book-learning), such as philosophy may be built upon — such, in fact, as I shall in its proper place describe: that so at length, after the lapse of so many ages, philosophy and the sciences may no longer float in air, but rest on the solid foundation of experience of every kind, and the same well examined and weighed. I have provided the machine, but the stuff must be gathered from the facts of nature. May God Almighty long preserve your Majesty!

Your Majesty's
Most bounden and devoted Servant, FRANCIS VERULAM,
Chancellor.

Preface

That the state of knowledge is not prosperous nor greatly advancing, and that a way must be opened for the human understanding entirely different from any hitherto known, and other helps provided, in order that the mind may exercise over the nature of things the authority which properly belongs to it.

It seems to me that men do not rightly understand either their store or their strength, but overrate the one and underrate the other. Hence it follows that either from an extravagant estimate of the value of the arts which they possess they seek no further, or else from too mean an estimate of their own powers they spend their strength in small matters and never put it fairly to the trial in those which go to the main. These are as the pillars of fate set in the path of knowledge, for men have neither desire nor hope to encourage them to penetrate further. And since opinion of store is one of the chief causes of want, and satisfaction with the present induces neglect of provision for the future, it becomes a thing not only useful, but absolutely necessary, that the excess of honor and admiration with which our existing stock of inventions is regarded be in the very entrance and threshold of the work, and that frankly and without circumlocution stripped off, and men be duly warned not to exaggerate or make too much of them. For let a man look carefully into all that variety of books with which the arts and sciences abound, he will find everywhere endless repetitions of the same thing, varying in the method of treatment, but not new in substance, insomuch that the whole stock, numerous as it appears at first view, proves on examination to be but scanty. And for its value and utility it must be plainly avowed that that wisdom which we have derived principally from the Greeks is but like the boyhood of knowledge, and has the characteristic property of boys: it can talk, but it cannot generate, for it is fruitful of controversies but barren of works. So that the state of learning as it now is appears to be represented to the life in the old fable of Scylla, who had the head and face of a virgin, but her womb was hung round with barking monsters, from which she could not be delivered. For in like manner the sciences to which we are accustomed have

certain general positions which are specious and flattering; but as soon as they come to particulars, which are as the parts of generation, when they should produce fruit and works, then arise contentions and barking disputations, which are the end of the matter and all the issue they can yield. Observe also, that if sciences of this kind had any life in them, that could never have come to pass which has been the case now for many ages — that they stand almost at a stay, without receiving any augmentations worthy of the human race, insomuch that many times not only what was asserted once is asserted still, but what was a question once is a question still, and instead of being resolved by discussion is only fixed and fed; and all the tradition and succession of schools is still a succession of masters and scholars, not of inventors and those who bring to further perfection the things invented. In the mechanical arts we do not find it so; they, on the contrary, as having in them some breath of life, are continually growing and becoming more perfect. As originally invented they are commonly rude, clumsy, and shapeless; afterwards they acquire new powers and more commodious arrangements and constructions, in so far that men shall sooner leave the study and pursuit of them and turn to something else than they arrive at the ultimate perfection of which they are capable. Philosophy and the intellectual sciences, on the contrary, stand like statues, worshipped and celebrated, but not moved or advanced. Nay, they sometimes flourish most in the hands of the first author, and afterwards degenerate. For when men have once made over their judgments to others' keeping, and (like those senators whom they called *Pedarii*) have agreed to support some one person's opinion, from that time they make no enlargement of the sciences themselves, but fall to the servile office of embellishing certain individual authors and increasing their retinue. And let it not be said that the sciences have been growing gradually till they have at last reached their full stature, and so (their course being completed) have settled in the works of a few writers; and that there being now no room for the invention of better, all that remains is to embellish and cultivate those things which have been invented already. Would it were so! But the truth is that this appropriating of the sciences has its origin in nothing better than the confidence of a few persons and

the sloth and indolence of the rest. For after the sciences had been in several perhaps cultivated and handled diligently, there has risen up some man of bold disposition, and famous for methods and short ways which people like, who has in appearance reduced them to an art, while he has in fact only spoiled all that the others had done. And yet this is what posterity likes, because it makes the work short and easy, and saves further inquiry, of which they are weary and impatient. And if any one take this general acquiescence and consent for an argument of weight, as being the judgment of Time, let me tell him that the reasoning on which he relies is most fallacious and weak. For, first, we are far from knowing all that in the matter of sciences and arts has in various ages and places been brought to light and published, much less all that has been by private persons secretly attempted and stirred; so neither the births nor the miscarriages of Time are entered in our records. Nor, secondly, is the consent itself and the time it has continued a consideration of much worth. For however various are the forms of civil polities, there is but one form of polity in the sciences; and that always has been and always will be popular. Now the doctrines which find most favor with the populace are those which are either contentious and pugnacious, or specious and empty — such, I say, as either entangle assent or tickle it. And therefore no doubt the greatest wits in each successive age have been forced out of their own course: men of capacity and intellect above the vulgar having been fain, for reputation's sake, to bow to the judgment of the time and the multitude; and thus if any contemplations of a higher order took light anywhere, they were presently blown out by the winds of vulgar opinions. So that Time is like a river which has brought down to us things light and puffed up, while those which are weighty and solid have sunk. Nay, those very authors who have usurped a kind of dictatorship in the sciences and taken upon them to lay down the law with such confidence, yet when from time to time they come to themselves again, they fall to complaints of the subtlety of nature, the hiding places of truth, the obscurity of things, the entanglement of causes, the weakness of the human mind; wherein nevertheless they show themselves never the more modest, seeing that they will rather lay the blame upon the common condition of men and nature

than upon themselves. And then whatever any art fails to attain, they ever set it down upon the authority of that art itself as impossible of attainment; and how can art be found guilty when it is judge in its own cause? So it is but a device for exempting ignorance from ignominy. Now for those things which are delivered and received, this is their condition: barren of works, full of questions; in point of enlargement slow and languid, carrying a show of perfection in the whole, but in the parts ill filled up; in selection popular, and unsatisfactory even to those who propound them; and therefore fenced round and set forth with sundry artifices. And if there be any who have determined to make trial for themselves and put their own strength to the work of advancing the boundaries of the sciences, yet have they not ventured to cast themselves completely loose from received opinions or to seek their knowledge at the fountain; but they think they have done some great thing if they do but add and introduce into the existing sum of science something of their own, prudently considering with themselves that by making the addition they can assert their liberty, while they retain the credit of modesty by assenting to the rest. But these mediocrities and middle ways so much praised, in deferring to opinions and customs, turn to the great detriment of the sciences. For it is hardly possible at once to admire an author and to go beyond him, knowledge being as water, which will not rise above the level from which it fell. Men of this kind, therefore, amend some things, but advance little, and improve the condition of knowledge, but do not extend its range. Some, indeed, there have been who have gone more boldly to work and, taking it all for an open matter and giving their genius full play, have made a passage for themselves and their own opinions by pulling down and demolishing former ones; and yet all their stir has but little advanced the matter, since their aim has been not to extend philosophy and the arts in substance and value, but only to change doctrines and transfer the kingdom of opinions to themselves; whereby little has indeed been gained, for though the error be the opposite of the other, the causes of erring are the same in both. And if there have been any who, not binding themselves either to other men’s opinions or to their own, but loving liberty, have desired to engage others along with themselves in search, these,

though honest in intention, have been weak in endeavor. For they have been content to follow probable reasons and are carried round in a whirl of arguments, and in the promiscuous liberty of search have relaxed the severity of inquiry. There is none who has dwelt upon experience and the facts of nature as long as is necessary. Some there are indeed who have committed themselves to the waves of experience and almost turned mechanics, yet these again have in their very experiments pursued a kind of wandering inquiry, without any regular system of operations. And besides they have mostly proposed to themselves certain petty tasks, taking it for a great matter to work out some single discovery — a course of proceeding at once poor in aim and unskillful in design. For no man can rightly and successfully investigate the nature of anything in the thing itself; let him vary his experiments as laboriously as he will, he never comes to a resting-place, but still finds something to seek beyond. And there is another thing to be remembered — namely, that all industry in experimenting has begun with proposing to itself certain definite works to be accomplished, and has pursued them with premature and unseasonable eagerness; it has sought, I say, experiments of fruit, not experiments of light, not imitating the divine procedure, which in its first day's work created light only and assigned to it one entire day, on which day it produced no material work, but proceeded to that on the days following. As for those who have given the first place to logic, supposing that the surest helps to the sciences were to be found in that, they have indeed most truly and excellently perceived that the human intellect left to its own course is not to be trusted; but then the remedy is altogether too weak for the disease, nor is it without evil in itself. For the logic which is received, though it be very properly applied to civil business and to those arts which rest in discourse and opinion, is not nearly subtle enough to deal with nature; and in attempting what it cannot master, has done more to establish and perpetuate error than to open the way to truth.

Upon the whole, therefore, it seems that men have not been happy hitherto either in the trust which they have placed in others or in their own industry with regard to the sciences; especially as neither the demonstrations nor the

experiments as yet known are much to be relied upon. But the universe to the eye of the human understanding is framed like a labyrinth, presenting as it does on every side so many ambiguities of way, such deceitful resemblances of objects and signs, natures so irregular in their lines and so knotted and entangled. And then the way is still to be made by the uncertain light of the sense, sometimes shining out, sometimes clouded over, through the woods of experience and particulars; while those who offer themselves for guides are (as was said) themselves also puzzled, and increase the number of errors and wanderers. In circumstances so difficult neither the natural force of man's judgment nor even any accidental felicity offers any chance of success. No excellence of wit, no repetition of chance experiments, can overcome such difficulties as these. Our steps must be guided by a clue, and the whole way from the very first perception of the senses must be laid out upon a sure plan. Not that I would be understood to mean that nothing whatever has been done in so many ages by so great labors. We have no reason to be ashamed of the discoveries which have been made, and no doubt the ancients proved themselves in everything that turns on wit and abstract meditation, wonderful men. But, as in former ages, when men sailed only by observation of the stars, they could indeed coast along the shores of the old continent or cross a few small and Mediterranean seas; but before the ocean could be traversed and the new world discovered, the use of the mariner's needle, as a more faithful and certain guide, had to be found out; in like manner the discoveries which have been hitherto made in the arts and sciences are such as might be made by practice, meditation, observation, argumentation — for they lay near to the senses and immediately beneath common notions; but before we can reach the remoter and more hidden parts of nature, it is necessary that a more perfect use and application of the human mind and intellect be introduced.

For my own part at least, in obedience to the everlasting love of truth, I have committed myself to the uncertainties and difficulties and solitudes of the ways and, relying on the divine assistance, have upheld my mind both against the shocks and embattled ranks of opinion, and against my own private and inward

hesitations and scruples, and against the fogs and clouds of nature, and the phantoms flitting about on every side, in the hope of providing at last for the present and future generations guidance more faithful and secure. Wherein if I have made any progress, the way has been opened to me by no other means than the true and legitimate humiliation of the human spirit. For all those who before me have applied themselves to the invention of arts have but cast a glance or two upon facts and examples and experience, and straightway proceeded, as if invention were nothing more than an exercise of thought, to invoke their own spirits to give them oracles. I, on the contrary, dwelling purely and constantly among the facts of nature, withdraw my intellect from them no further than may suffice to let the images and rays of natural objects meet in a point, as they do in the sense of vision; whence it follows that the strength and excellence of the wit has but little to do in the matter. And the same humility which I use in inventing I employ likewise in teaching. For I do not endeavor either by triumphs of confutation, or pleadings of antiquity, or assumption of authority, or even by the veil of obscurity, to invest these inventions of mine with any majesty; which might easily be done by one who sought to give luster to his own name rather than light to other men's minds. I have not sought (I say) nor do I seek either to force or ensnare men's judgments, but I lead them to things themselves and the concordances of things, that they may see for themselves what they have, what they can dispute, what they can add and contribute to the common stock. And for myself, if in anything I have been either too credulous or too little awake and attentive, or if I have fallen off by the way and left the inquiry incomplete, nevertheless I so present these things naked and open, that my errors can be marked and set aside before the mass of knowledge be further infected by them; and it will be easy also for others to continue and carry on my labors. And by these means I suppose that I have established forever a true and lawful marriage between the empirical and the rational faculty, the unkind and ill-starred divorce and separation of which has thrown into confusion all the affairs of the human family.

Wherefore, seeing that these things do not depend upon myself, at the outset of the work I most humbly and fervently pray to God the Father, God the Son, and God the Holy Ghost, that remembering the sorrows of mankind and the pilgrimage of this our life wherein we wear out days few and evil, they will vouchsafe through my hands to endow the human family with new mercies. This likewise I humbly pray, that things human may not interfere with things divine, and that from the opening of the ways of sense and the increase of natural light there may arise in our minds no incredulity or darkness with regard to the divine mysteries, but rather that the understanding being thereby purified and purged of fancies and vanity, and yet not the less subject and entirely submissive to the divine oracles, may give to faith that which is faith's. Lastly, that knowledge being now discharged of that venom which the serpent infused into it, and which makes the mind of man to swell, we may not be wise above measure and sobriety, but cultivate truth in charity.

And now, having said my prayers, I turn to men, to whom I have certain salutary admonitions to offer and certain fair requests to make. My first admonition (which was also my prayer) is that men confine the sense within the limits of duty in respect of things divine: for the sense is like the sun, which reveals the face of earth, but seals and shuts up the face of heaven. My next, that in flying from this evil they fall not into the opposite error, which they will surely do if they think that the inquisition of nature is in any part interdicted or forbidden. For it was not that pure and uncorrupted natural knowledge whereby Adam gave names to the creatures according to their propriety, which, gave occasion to the fall. It was the ambitious and proud desire of moral knowledge to judge of good and evil, to the end that man may revolt from God and give laws to himself, which was the form and manner of the temptation. Whereas of the sciences which regard nature, the divine philosopher declares that "it is the glory of God to conceal a thing, but it is the glory of the King to find a thing out." Even as though the divine nature took pleasure in the innocent and kindly sport of children playing at hide-and-seek, and vouchsafed of his kindness and goodness to admit the human spirit for his playfellow at that game. Lastly, I

would address one general admonition to all — that they consider what are the true ends of knowledge, and that they seek it not either for pleasure of the mind, or for contention, or for superiority to others, or for profit, or fame, or power, or any of these inferior things, but for the benefit and use of life, and that they perfect and govern it in charity. For it was from lust of power that the angels fell, from lust of knowledge that man fell; but of charity there can be no excess, neither did angel or man ever come in danger by it.

The requests I have to make are these. Of myself I say nothing; but in behalf of the business which is in hand I entreat men to believe that it is not an opinion to be held, but a work to be done; and to be well assured that I am laboring to lay the foundation, not of any sect or doctrine, but of human utility and power. Next, I ask them to deal fairly by their own interests, and laying aside all emulations and prejudices in favor of this or that opinion, to join in consultation for the common good; and being now freed and guarded by the securities and helps which I offer from the errors and impediments of the way, to come forward themselves and take part in that which remains to be done. Moreover, to be of good hope, nor to imagine that this Instauration of mine is a thing infinite and beyond the power of man, when it is in fact the true end and termination of infinite error; and seeing also that it is by no means forgetful of the conditions of mortality and humanity (for it does not suppose that the work can be altogether completed within one generation, but provides for its being taken up by another); and finally that it seeks for the sciences not arrogantly in the little cells of human wit, but with reverence in the greater world. But it is the empty things that are vast; things solid are most contracted and lie in little room. And now I have only one favor more to ask (else injustice to me may perhaps imperil the business itself) — that men will consider well how far, upon that which I must needs assert (if I am to be consistent with myself), they are entitled to judge and decide upon these doctrines of mine; inasmuch as all that premature human reasoning which anticipates inquiry, and is abstracted from the facts rashly and sooner than is fit, is by me rejected (so far as the inquisition of nature is concerned) as a

thing uncertain, confused, and ill built up; and I cannot be fairly asked to abide by the decision of a tribunal which is itself on trial.

[Reference is to Aristotle. Cf. the editor's Introduction.]

The Plan of the Great Instauration

The Instauration includes six Parts: 1. The Divisions of the Sciences 2. The New Organon; or Directions concerning the Interpretation of Nature 3. The Phenomena of the Universe; or a Natural and Experimental History for the Foundation of Philosophy 4. The Ladder of the Intellect
5. The Forerunners; or Anticipations of the New Philosophy 6. The New Philosophy; or Active Science

The Arguments of the Several Parts

It being part of my design to set everything forth, as far as may be, plainly and perspicuously (for nakedness of the mind is still, as nakedness of the body once was, the companion of innocence and simplicity), let me first explain the order and plan of the work. I distribute it into six parts.

The first part exhibits a summary or general description of the knowledge which the human race at present possesses. For I thought it good to make some pause upon that which is received; that thereby the old may be more easily made perfect and the new more easily approached. And I hold the improvement of that which we have to be as much an object as the acquisition of more. Besides which it will make me the better listened to; for "He that is ignorant (says the proverb) receives not the words of knowledge, unless thou first tell him that which is in his own heart." We will therefore make a coasting voyage along the shores of the arts and sciences received, not without importing into them some useful things by the way.

In laying out the divisions of the sciences, however, I take into account not only things already invented and known, but likewise things omitted which ought to be there. For there are found in the intellectual as in the terrestrial globe waste regions as well as cultivated ones. It is no wonder, therefore, if I am sometimes obliged to depart from the ordinary divisions. For in adding to the total you necessarily alter the parts and sections; and the received divisions of the sciences are fitted only to the received sum of them as it stands now.

With regard to those things which I shall mark as omitted, I intend not merely to set down a simple title or a concise argument of that which is wanted. For as often as I have occasion to report anything as deficient, the nature of which is at all obscure, so that men may not perhaps easily understand what I mean or what the work is which I have in my head, I shall always (provided it be a matter of any worth) take care to subjoin either directions for the execution of such work, or else a portion of the work itself executed by myself as a sample of the whole,

thus giving assistance in every case either by work or by counsel. For if it were for the sake of my own reputation only and other men's interests were not concerned in it, I would not have any man think that in such cases merely some light and vague notion has crossed my mind, and that the things which I desire and attempt are no better than wishes, when they are in fact things which men may certainly command if they will, and of which I have formed in my own mind a clear and detailed conception. For I do not propose merely to survey these regions in my mind, like an augur taking auspices, but to enter them like a general who means to take possession. So much for the first part of the work.

Having thus coasted past the ancient arts, the next point is to equip the intellect for passing beyond. To the second part, therefore, belongs the doctrine concerning the better and more perfect use of human reason in the inquisition of things, and the true helps of the understanding, that thereby (as far as the condition of mortality and humanity allows) the intellect may be raised and exalted, and made capable of overcoming the difficulties and obscurities of nature. The art which I introduce with this view (which I call "Interpretation of Nature") is a kind of logic, though the difference between it and the ordinary logic is great, indeed, immense. For the ordinary logic professes to contrive and prepare helps and guards for the understanding, as mine does; and in this one point they agree. But mine differs from it in three points especially — viz., in the end aimed at, in the order of demonstration, and in the starting point of the inquiry.

For the end which this science of mine proposes is the invention not of arguments but of arts; not of things in accordance with principles, but of principles themselves; not of probable reasons, but of designations and directions for works. And as the intention is different, so, accordingly, is the effect; the effect of the one being to overcome an opponent in argument, of the other to command nature in action.

In accordance with this end is also the nature and order of the demonstrations. For in the ordinary logic almost all the work is spent about the syllogism. Of induction, the logicians seem hardly to have taken any serious thought, but they

pass it by with a slight notice and hasten on to the formulae of disputation. I, on the contrary, reject demonstration by syllogism as acting too confusedly and letting nature slip out of its hands. For although no one can doubt that things which agree in a middle term agree with one another (which is a proposition of mathematical certainty), yet it leaves an opening for deception, which is this: the syllogism consists of propositions — propositions of words; and words are the tokens and signs of notions. Now if the very notions of the mind (which are as the soul of words and the basis of the whole structure) be improperly and overhastily abstracted from facts, vague, not sufficiently definite, faulty — in short, in many ways, the whole edifice tumbles. I therefore reject the syllogism, and that not only as regards principles (for to principles the logicians themselves do not apply it) but also as regards middle propositions, which, though obtainable no doubt by the syllogism, are, when so obtained, barren of works, remote from practice, and altogether unavailable for the active department of the sciences. Although, therefore, I leave to the syllogism and these famous and boasted modes of demonstration their jurisdiction over popular arts and such as are matter of opinion (in which department I leave all as it is), yet in dealing with the nature of things I use induction throughout, and that in the minor propositions as well as the major. For I consider induction to be that form of demonstration which upholds the sense, and closes with nature, and comes to the very brink of operation, if it does not actually deal with it.

Hence it follows that the order of demonstration is likewise inverted. For hitherto the proceeding has been to fly at once from the sense and particulars up to the most general propositions, as certain fixed poles for the argument to turn upon, and from these to derive the rest by middle terms — a short way, no doubt, but precipitate and one which will never lead to nature, though it offers an easy and ready way to disputation. Now my plan is to proceed regularly and gradually from one axiom to another, so that the most general are not reached till the last; but then, when you do come to them, you find them to be not empty notions but well defined, and such as nature would really recognize as her first principles, and such as lie at the heart and marrow of things.

But the greatest change I introduce is in the form itself of induction and the judgment made thereby. For the induction of which the logicians speak, which proceeds by simple enumeration, is a puerile thing, concludes at hazard, is always liable to be upset by a contradictory instance, takes into account only what is known and ordinary, and leads to no result.

Now what the sciences stand in need of is a form of induction which shall analyze experience and take it to pieces, and by a due process of exclusion and rejection lead to an inevitable conclusion. And if that ordinary mode of judgment practiced by the logicians was so laborious, and found exercise for such great wits, how much more labor must we be prepared to bestow upon this other, which is extracted not merely out of the depths of the mind, but out of the very bowels of nature.

Nor is this all. For I also sink the foundations of the sciences deeper and firmer; and I begin the inquiry nearer the source than men have done heretofore, submitting to examination those things which the common logic takes on trust. For first, the logicians borrow the principles of each science from the science itself; secondly, they hold in reverence the first notions of the mind; and lastly, they receive as conclusive the immediate informations of the sense, when well disposed. Now upon the first point, I hold that true logic ought to enter the several provinces of science armed with a higher authority than belongs to the principles of those sciences themselves, and ought to call those putative principles to account until they are fully established. Then with regard to the first notions of the intellect, there is not one of the impressions taken by the intellect when left to go its own way, but I hold it as suspect and no way established until it has submitted to a new trial and a fresh judgment has been thereupon pronounced. And lastly, the information of the sense itself I sift and examine in many ways. For certain it is that the senses deceive; but then at the same time they supply the means of discovering their own errors; only the errors are here, the means of discovery are to seek.

The sense fails in two ways. Sometimes it gives no information, sometimes it gives false information. For first, there are very many things which escape the

sense, even when best disposed and no way obstructed, by reason either of the subtlety of the whole body or the minuteness of the parts, or distance of place, or slowness or else swiftness of motion, or familiarity of the object, or other causes. And again when the sense does apprehend a thing its apprehension is not much to be relied upon. For the testimony and information of the sense has reference always to man, not to the universe; and it is a great error to assert that the sense is the measure of things.

To meet these difficulties, I have sought on all sides diligently and faithfully to provide helps for the sense — substitutes to supply its failures, rectifications to correct its errors; and this I endeavor to accomplish not so much by instruments as by experiments. For the subtlety of experiments is far greater than that of the sense itself, even when assisted by exquisite instruments — such experiments, I mean, as are skillfully and artificially devised for the express purpose of determining the point in question. To the immediate and proper perception of the sense, therefore, I do not give much weight; but I contrive that the office of the sense shall be only to judge of the experiment, and that the experiment itself shall judge of the thing. And thus I conceive that I perform the office of a true priest of the sense (from which all knowledge in nature must be sought, unless men mean to go mad) and a not unskillful interpreter of its oracles; and that while others only profess to uphold and cultivate the sense, I do so in fact. Such then are the provisions I make for finding the genuine light of nature and kindling and bringing it to bear. And they would be sufficient of themselves if the human intellect were even and like a fair sheet of paper with no writing on it. But since the minds of men are strangely possessed and beset so that there is no true and even surface left to reflect the genuine rays of things, it is necessary to seek a remedy for this also.

Now the idols, or phantoms, by which the mind is occupied are either adventitious or innate. The adventitious come into the mind from without — namely, either from the doctrines and sects of philosophers or from perverse rules of demonstration. But the innate are inherent in the very nature of the intellect, which is far more prone to error than the sense is. For let men please

themselves as they will in admiring and almost adoring the human mind, this is certain: that as an uneven mirror distorts the rays of objects according to its own figure and section, so the mind, when it receives impressions of objects through the sense, cannot be trusted to report them truly, but in forming its notions mixes up its own nature with the nature of things.

And as the first two kinds of idols are hard to eradicate, so idols of this last kind cannot be eradicated at all. All that can be done is to point them out, so that this insidious action of the mind may be marked and reproved (else as fast as old errors are destroyed new ones will spring up out of the ill complexion of the mind itself, and so we shall have but a change of errors, and not a clearance); and to lay it down once for all as a fixed and established maxim that the intellect is not qualified to judge except by means of induction, and induction in its legitimate form. This doctrine, then, of the expurgation of the intellect to qualify it for dealing with truth is comprised in three refutations: the refutation of the philosophies; the refutation of the demonstrations; and the refutation of the natural human reason. The explanation of which things, and of the true relation between the nature of things and the nature of the mind, is as the strewing and decoration of the bridal chamber of the mind and the universe, the divine goodness assisting, out of which marriage let us hope (and be this the prayer of the bridal song) there may spring helps to man, and a line and race of inventions that may in some degree subdue and overcome the necessities and miseries of humanity. This is the second part of the work.

But I design not only to indicate and mark out the ways, but also to enter them. And therefore the third part of the work embraces the “phenomena of the universe”; that is to say, experience of every kind, and such a natural history as may serve for a foundation to build philosophy upon. For a good method of demonstration or form of interpreting nature may keep the mind from going astray or stumbling, but it is not any excellence of method that can supply it with the material of knowledge. Those, however, who aspire not to guess and divine, but to discover and know, who propose not to devise mimic and fabulous worlds of their own, but to examine and dissect the nature of this very world itself, must

go to facts themselves for everything. Nor can the place of this labor and search and world-wide perambulation be supplied by any genius or meditation or argumentation; no, not if all men's wits could meet in one. This, therefore, we must have or the business must be forever abandoned. But up to this day such has been the condition of men in this matter that it is no wonder if nature will not give herself into their hands.

For first, the information of the sense itself, sometimes failing, sometimes false; observation, careless, irregular, and led by chance; tradition, vain, and fed on rumor; practice, slavishly bent upon its work; experiment, blind, stupid, vague, and prematurely broken off; lastly, natural history trivial and poor — all these have contributed to supply the understanding with very bad materials for philosophy and the sciences.

Then an attempt is made to mend the matter by a preposterous subtlety and winnowing of argument. But this comes too late, the case being already past remedy, and is far from setting the business right or sifting away the errors. The only hope, therefore, of any greater increase or progress lies in a reconstruction of the sciences.

Of this reconstruction the foundation must be laid in natural history, and that of a new kind and gathered on a new principle. For it is in vain that you polish the mirror if there are no images to be reflected; and it is as necessary that the intellect should be supplied with fit matter to work upon, as with safeguards to guide its working. But my history differs from that in use (as my logic does) in many things — in end and office, in mass and composition, in subtlety, in selection also, and setting forth, with a view to the operations which are to follow.

For first, the object of the natural history which I propose is not so much to delight with variety of matter or to help with present use of experiments, as to give light to the discovery of causes and supply a suckling philosophy with its first food. For though it be true that I am principally in pursuit of works and the active department of the sciences, yet I wait for harvest-time and do not attempt to mow the moss or to reap the green corn. For I well know that axioms once

rightly discovered will carry whole troops of works along with them, and produce them, not here and there one, but in clusters. And that unseasonable and puerile hurry to snatch by way of earnest at the first works which come within reach, I utterly condemn and reject as an Atalanta's apple that hinders the race. Such then is the office of this natural history of mine.

Next, with regard to the mass and composition of it: I mean it to be a history not only of nature free and at large (when she is left to her own course and does her work her own way) — such as that of the heavenly bodies, meteors, earth and sea, minerals, plants, animals — but much more of nature under constraint and vexed; that is to say, when by art and the hand of man she is forced out of her natural state, and squeezed and moulded. Therefore I set down at length all experiments of the mechanical arts, of the operative part of the liberal arts, of the many crafts which have not yet grown into arts properly so called, so far as I have been able to examine them and as they conduce to the end in view. Nay (to say the plain truth), I do in fact (low and vulgar as men may think it) count more upon this part both for helps and safeguards than upon the other, seeing that the nature of things betrays itself more readily under the vexations of art than in its natural freedom.

Nor do I confine the history to bodies, but I have thought it my duty besides to make a separate history of such virtues as may be considered cardinal in nature. I mean those original passions or desires of matter which constitute the primary elements of nature; such as dense and rare, hot and cold, solid and fluid, heavy and light, and several others.

Then again, to speak of subtlety: I seek out and get together a kind of experiments much subtler and simpler than those which occur accidentally. For I drag into light many things which no one who was not proceeding by a regular and certain way to the discovery of causes would have thought of inquiring after, being indeed in themselves of no great use; which shows that they were not sought for on their own account, but having just the same relation to things and works which the letters of the alphabet have to speech and words — which, though in themselves useless, are the elements of which all discourse is made up.

Further, in the selection of the relation and experiments I conceive I have been a more cautious purveyor than those who have hitherto dealt with natural history. For I admit nothing but on the faith of eyes, or at least of careful and severe examination, so that nothing is exaggerated for wonder's sake, but what I state is sound and without mixture of fables or vanity. All received or current falsehoods also (which by strange negligence have been allowed for many ages to prevail and become established) I proscribe and brand by name, that the sciences may be no more troubled with them. For it has been well observed that the fables and superstitions and follies which nurses instill into children do serious injury to their minds; and the same consideration makes me anxious, having the management of the childhood, as it were, of philosophy in its course of natural history, not to let it accustom itself in the beginning to any vanity. Moreover, whenever I come to a new experiment of any subtlety (though it be in my own opinion certain and approved), I nevertheless subjoin a clear account of the manner in which I made it, that men, knowing exactly how each point was made out, may see whether there be any error connected with it and may arouse themselves to devise proofs more trustworthy and exquisite, if such can be found; and finally, I interpose everywhere admonitions and scruples and cautions, with a religious care to eject, repress, and, as it were, exorcise every kind of phantasm.

Lastly, knowing how much the sight of man's mind is distracted by experience and history, and how hard it is at the first (especially for minds either tender or preoccupied) to become familiar with nature, I not unfrequently subjoin observations of my own, being as the first offers inclinations, and, as it were, glances of history toward philosophy, both by way of an assurance to men that they will not be kept forever tossing on the waves of experience, and also that when the time comes for the intellect to begin its work, it may find everything the more ready. By such a natural history, then, as I have described, I conceive that a safe and convenient approach may be made to nature, and matter supplied of good quality and well prepared for the understanding to work upon.

And now that we have surrounded the intellect with faithful helps and guards, and got together with most careful selection a regular army of divine works, it may seem that we have no more to do but to proceed to philosophy itself. And yet in a matter so difficult and doubtful there are still some things which it seems necessary to premise, partly for convenience of explanation, partly for present use.

Of these the first is to set forth examples of inquiry and invention according to my method, exhibited by anticipation in some particular subjects; choosing such subjects as are at once the most noble in themselves among those under inquiry, and most different one from another, that there may be an example in every kind. I do not speak of those examples which are joined to the several precepts and rules by way of illustration (for of these I have given plenty in the second part of the work); but I mean actual types and models, by which the entire process of the mind and the whole fabric and order of invention from the beginning to the end, in certain subjects, and those various and remarkable, should be set, as it were, before the eyes. For I remember that in the mathematics it is easy to follow the demonstration when you have a machine beside you, whereas without that help all appears involved and more subtle than it really is. To examples of this kind — being in fact nothing more than an application of the second part in detail and at large — the fourth part of the work is devoted.

The fifth part is for temporary use only, pending the completion of the rest, like interest payable from time to time until the principal be forthcoming. For I do not make so blindly for the end of my journey as to neglect anything useful that may turn up by the way. And therefore I include in this part such things as I have myself discovered, proved, or added — not, however, according to the true rules and methods of interpretation, but by the ordinary use of the understanding in inquiring and discovering. For besides that I hope my speculations may, in virtue of my continual conversancy with nature, have a value beyond the pretensions of my wit, they will serve in the meantime for wayside inns, in which the mind may rest and refresh itself on its journey to more certain conclusions. Nevertheless I wish it to be understood in the meantime that they

are conclusions by which (as not being discovered and proved by the true form of interpretation) I do not at all mean to bind myself. Nor need any one be alarmed at such suspension of judgment in one who maintains not simply that nothing can be known, but only that nothing can be known except in a certain course and way; and yet establishes provisionally certain degrees of assurance for use and relief until the mind shall arrive at a knowledge of causes in which it can rest. For even those schools of philosophy which held the absolute impossibility of knowing anything were not inferior to those which took upon them to pronounce. But then they did not provide helps for the sense and understanding, as I have done, but simply took away all their authority; which is quite a different thing — almost the reverse.

The sixth part of my work (to which the rest is subservient and ministrant) discloses and sets forth that philosophy which by the legitimate, chaste, and severe course of inquiry which I have explained and provided is at length developed and established. The completion, however, of this last part is a thing both above my strength and beyond my hopes. I have made a beginning of the work — a beginning, as I hope, not unimportant: the fortune of the human race will give the issue, such an issue, it may be, as in the present condition of things and men's minds cannot easily be conceived or imagined. For the matter in hand is no mere felicity of speculation, but the real business and fortunes of the human race, and all power of operation. For man is but the servant and interpreter of nature: what he does and what he knows is only what he has observed of nature's order in fact or in thought; beyond this he knows nothing and can do nothing. For the chain of causes cannot by any force be loosed or broken, nor can nature be commanded except by being obeyed. And so those twin objects, human knowledge and human power, do really meet in one; and it is from ignorance of causes that operation fails.

And all depends on keeping the eye steadily fixed upon the facts of nature and so receiving their images simply as they are. For God forbid that we should give out a dream of our own imagination for a pattern of the world; rather may

he graciously grant to us to write an apocalypse or true vision of the footsteps of the Creator imprinted on his creatures.

Therefore do thou, O Father, who gavest the visible light as the first fruits of creation, and didst breathe into the face of man the intellectual light as the crown and consummation thereof, guard and protect this work, which coming from thy goodness returneth to thy glory. Thou when thou turnedst to look upon the works which thy hands had made, sawest that all was very good, and didst rest from thy labors. But man, when he turned to look upon the work which his hands had made, saw that all was vanity and vexation of spirit, and could find no rest therein. Wherefore if we labor in thy works with the sweat of our brows, thou wilt make us partakers of thy vision and thy sabbath. Humbly we pray that this mind may be steadfast in us, and that through these our hands, and the hands of others to whom thou shall give the same spirit, thou wilt vouchsafe to endow the human family with new mercies.

Novum Organum Scientiarum

NEW METHOD

Translated by William Wood and Joseph Devey Novum Organum Scientiarum was originally written in Latin and published in 1620. The title is a reference to Aristotle's work *Organon*, a treatise on logic and syllogism. Bacon's essay details a new system of logic he believes to be superior to the old ways of syllogism. The text was instrumental in the historical development of the scientific method. Offering a technique centred on experimental research, Bacon's emphasis on the use of artificial experiments to provide additional observances of a phenomenon is one reason that he was judged by other great thinkers, including Voltaire, to be "the Father of the Experimental Philosophy". In this important text, Bacon sets the scene for science to develop various methodologies, criticising Aristotelian approaches to science, arguing that method was needed to understand the natural biases and weaknesses of the human mind, including the natural bias it has to seek metaphysical explanations not based on real observations.

The 1645 title page illustration

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ORIGINAL LATIN TEXT.

PRAEFATIO.

DISTRIBUTIO OPERIS

PRAEFATIO.

APHORISMUS.

LIBER SECUNDUS

WOOD AND DEVEY TRANSLATION.

PREFACE

They who have presumed to dogmatize on nature, as on some well investigated subject, either from self-conceit or arrogance, and in the professorial style, have inflicted the greatest injury on philosophy and learning. For they have tended to stifle and interrupt inquiry exactly in proportion as they have prevailed in bringing others to their opinion: and their own activity has not counterbalanced the mischief they have occasioned by corrupting and destroying that of others. They again who have entered upon a contrary course, and asserted that nothing whatever can be known, whether they have fallen into this opinion from their hatred of the ancient sophists, or from the hesitation of their minds, or from an exuberance of learning, have certainly adduced reasons for it which are by no means contemptible. They have not, however, derived their opinion from true sources, and, hurried on by their zeal and some affectation, have certainly exceeded due moderation. But the more ancient Greeks (whose writings have perished), held a more prudent mean, between the arrogance of dogmatism, and the despair of scepticism; and though too frequently intermingling complaints and indignation at the difficulty of inquiry, and the obscurity of things, and champing, as it were, the bit, have still persisted in pressing their point, and pursuing their intercourse with nature; thinking, as it seems, that the better method was not to dispute upon the very point of the possibility of anything being known, but to put it to the test of experience. Yet they themselves, by only employing the power of the understanding, have not adopted a fixed rule, but have laid their whole stress upon intense meditation, and a continual exercise and perpetual agitation of the mind.

Our method, though difficult in its operation, is easily explained. It consists in determining the degrees of certainty, while we, as it were, restore the senses to their former rank, but generally reject that operation of the mind which follows close upon the senses, and open and establish a new and certain course for the mind from the first actual perceptions of the senses themselves. This, no doubt, was the view taken by those who have assigned so much to logic; showing

clearly thereby that they sought some support for the mind, and suspected its natural and spontaneous mode of action. But this is now employed too late as a remedy, when all is clearly lost, and after the mind, by the daily habit and intercourse of life, has come prepossessed with corrupted doctrines, and filled with the vainest idols. The art of logic therefore being (as we have mentioned), too late a precaution,[1] and in no way remedying the matter, has tended more to confirm errors, than to disclose truth. Our only remaining hope and salvation is to begin the whole labor of the mind again; not leaving it to itself, but directing it perpetually from the very first, and attaining our end as it were by mechanical aid. If men, for instance, had attempted mechanical labors with their hands alone, and without the power and aid of instruments, as they have not hesitated to carry on the labors of their understanding with the unaided efforts of their mind, they would have been able to move and overcome but little, though they had exerted their utmost and united powers. And just to pause awhile on this comparison, and look into it as a mirror; let us ask, if any obelisk of a remarkable size were perchance required to be moved, for the purpose of gracing a triumph or any similar pageant, and men were to attempt it with their bare hands, would not any sober spectator avow it to be an act of the greatest madness? And if they should increase the number of workmen, and imagine that they could thus succeed, would he not think so still more? But if they chose to make a selection, and to remove the weak, and only employ the strong and vigorous, thinking by this means, at any rate, to achieve their object, would he not say that they were more fondly deranged? Nay, if not content with this, they were to determine on consulting the athletic art, and were to give orders for all to appear with their hands, arms, and muscles regularly oiled and prepared, would he not exclaim that they were taking pains to rave by method and design? Yet men are hurried on with the same senseless energy and useless combination in intellectual matters, as long as they expect great results either from the number and agreement, or the excellence and acuteness of their wits; or even strengthen their minds with logic, which may be considered as an athletic preparation, but yet do not desist (if we rightly consider the matter) from applying their own

understandings merely with all this zeal and effort. While nothing is more clear, than that in every great work executed by the hand of man without machines or implements, it is impossible for the strength of individuals to be increased, or for that of the multitude to combine.

Having premised so much, we lay down two points on which we would admonish mankind, lest they should fail to see or to observe them. The first of these is, that it is our good fortune (as we consider it), for the sake of extinguishing and removing contradiction and irritation of mind, to leave the honor and reverence due to the ancients untouched and undiminished, so that we can perform our intended work, and yet enjoy the benefit of our respectful moderation. For if we should profess to offer something better than the ancients, and yet should pursue the same course as they have done, we could never, by any artifice, contrive to avoid the imputation of having engaged in a contest or rivalry as to our respective wits, excellences, or talents; which, though neither inadmissible nor new (for why should we not blame and point out anything that is imperfectly discovered or laid down by them, of our own right, a right common to all?), yet however just and allowable, would perhaps be scarcely an equal match, on account of the disproportion of our strength. But since our present plan leads up to open an entirely different course to the understanding, and one unattempted and unknown to them, the case is altered. There is an end to party zeal, and we only take upon ourselves the character of a guide, which requires a moderate share of authority and good fortune, rather than talents and excellence. The first admonition relates to persons, the next to things.

We make no attempt to disturb the system of philosophy that now prevails, or any other which may or will exist, either more correct or more complete. For we deny not that the received system of philosophy, and others of a similar nature, encourage discussion, embellish harangues, are employed, and are of service in the duties of the professor, and the affairs of civil life. Nay, we openly express and declare that the philosophy we offer will not be very useful in such respects. It is not obvious, nor to be understood in a cursory view, nor does it flatter the

mind in its preconceived notions, nor will it descend to the level of the generality of mankind unless by its advantages and effects.

Let there exist then (and may it be of advantage to both), two sources, and two distributions of learning, and in like manner two tribes, and as it were kindred families of contemplators or philosophers, without any hostility or alienation between them; but rather allied and united by mutual assistance. Let there be in short one method of cultivating the sciences, and another of discovering them. And as for those who prefer and more readily receive the former, on account of their haste or from motives arising from their ordinary life, or because they are unable from weakness of mind to comprehend and embrace the other (which must necessarily be the case with by far the greater number), let us wish that they may prosper as they desire in their undertaking, and attain what they pursue. But if any individual desire, and is anxious not merely to adhere to, and make use of present discoveries, but to penetrate still further, and not to overcome his adversaries in disputes, but nature by labor, not in short to give elegant and specious opinions, but to know to a certainty and demonstration, let him, as a true son of science (if such be his wish), join with us; that when he has left the antechambers of nature trodden by the multitude, an entrance may at last be discovered to her inner apartments. And in order to be better understood, and to render our meaning more familiar by assigning determinate names, we have accustomed ourselves to call the one method the anticipation of the mind, and the other the interpretation of nature.

We have still one request left. We have at least reflected and taken pains in order to render our propositions not only true, but of easy and familiar access to men's minds, however wonderfully prepossessed and limited. Yet it is but just that we should obtain this favor from mankind (especially in so great a restoration of learning and the sciences), that whosoever may be desirous of forming any determination upon an opinion of this our work either from his own perceptions, or the crowd of authorities, or the forms of demonstrations, he will not expect to be able to do so in a cursory manner, and while attending to other matters; but in order to have a thorough knowledge of the subject, will himself

by degrees attempt the course which we describe and maintain; will be accustomed to the subtilty of things which is manifested by experience; and will correct the depraved and deeply rooted habits of his mind by a seasonable, and, as it were, just hesitation: and then, finally (if he will), use his judgment when he has begun to be master of himself.

ENDNOTE.

[1] Because it was idle to draw a logical conclusion from false principles, error being propagated as much by false premises, which logic does not pretend to examine, as by illegitimate inference. Hence, as Bacon says further on, men being easily led to confound legitimate inference with truth, were confirmed in their errors by the very subtilty of their genius. — *Ed.*

APHORISMS — BOOK I. ON THE INTERPRETATION OF NATURE AND THE EMPIRE OF MAN

I. Man, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature, either with regard to things or the mind, permit him, and neither knows nor is capable of more.

II. The unassisted hand and the understanding left to itself possess but little power. Effects are produced by the means of instruments and helps, which the understanding requires no less than the hand; and as instruments either promote or regulate the motion of the hand, so those that are applied to the mind prompt or protect the understanding.

III. Knowledge and human power are synonymous, since the ignorance of the cause frustrates the effect; for nature is only subdued by submission, and that which in contemplative philosophy corresponds with the cause in practical science becomes the rule.

IV. Man while operating can only apply or withdraw natural bodies; nature internally performs the rest.

V. Those who become practically versed in nature are, the mechanic, the mathematician, the physician, the alchemist, and the *magician*,[2] but all (as matters now stand) with faint efforts and meagre success.

VI. It would be madness and inconsistency to suppose that things which have never yet been performed can be performed without employing some hitherto untried means.

VII. The creations of the mind and hand appear very numerous, if we judge by books and manufactures; but all that variety consists of an excessive refinement, and of deductions from a few well known matters — *not of a number of axioms*.[3]

VIII. Even the effects already discovered are due to chance and experiment rather than to the sciences; for our present sciences are nothing more than peculiar arrangements of matters already discovered, and not methods for discovery or plans for new operations.

IX. The sole cause and root of almost every defect in the sciences is this, that while we falsely admire and extol the powers of the human mind, we do not search for its real helps.

X. The subtilty of nature is far beyond that of sense or of the understanding: so that the specious meditations, speculations, and theories of mankind are but a kind of insanity, only there is no one to stand by and observe it.

XI. As the present sciences are useless for the discovery of effects, so the present system of logic[4] is useless for the discovery of the sciences.

XII. The present system of logic rather assists in confirming and rendering inveterate the errors founded on vulgar notions than in searching after truth, and is therefore more hurtful than useful.

XIII. The syllogism is not applied to the principles of the sciences, and is of no avail in intermediate axioms,[5] as being very unequal to the subtilty of nature. It forces assent, therefore, and not things.

XIV. The syllogism consists of propositions; propositions of words; words are the signs of notions. If, therefore, the notions (which form the basis of the whole) be confused and carelessly abstracted from things, there is no solidity in the superstructure. Our only hope, then, is in genuine induction.

XV. We have no sound notions either in logic or physics; substance, quality, action, passion, and existence are not clear notions; much less weight, levity, density, tenuity, moisture, dryness, generation, corruption, attraction, repulsion, element, matter, form, and the like. They are all fantastical and ill-defined.

XVI. The notions of less abstract natures, as man, dog, dove, and the immediate perceptions of sense, as heat, cold, white, black, do not deceive us materially, yet even these are sometimes confused by the mutability of matter

and the intermixture of things. All the rest which men have hitherto employed are errors, and improperly abstracted and deduced from things.

XVII. There is the same degree of licentiousness and error in forming axioms as in abstracting notions, and that in the first principles, which depend on common induction; still more is this the case in axioms and inferior propositions derived from syllogisms.

XVIII. The present discoveries in science are such as lie immediately beneath the surface of common notions. It is necessary, however, to penetrate the more secret and remote parts of nature, in order to abstract both notions and axioms from things by a more certain and guarded method.

XIX. There are and can exist but two ways of investigating and discovering truth. The one hurries on rapidly from the senses and particulars to the most general axioms, and from them, as principles and their supposed indisputable truth, derives and discovers the intermediate axioms. This is the way now in use. The other constructs its axioms from the senses and particulars, by ascending continually and gradually, till it finally arrives at the most general axioms, which is the true but unattempted way.

XX. The understanding when left to itself proceeds by the same way as that which it would have adopted under the guidance of logic, namely, the first; for the mind is fond of starting off to generalities, that it may avoid labor, and after dwelling a little on a subject is fatigued by experiment. But those evils are augmented by logic, for the sake of the ostentation of dispute.

XXI. The understanding, when left to itself in a man of a steady, patient, and reflecting disposition (especially when unimpeded by received doctrines), makes some attempt in the right way, but with little effect, since the understanding, undirected and unassisted, is unequal to and unfit for the task of vanquishing the obscurity of things.

XXII. Each of these two ways begins from the senses and particulars, and ends in the greatest generalities. But they are immeasurably different; for the one merely touches cursorily the limits of experiment and particulars, while the other runs duly and regularly through them — the one from the very outset lays down

some abstract and useless generalities, the other gradually rises to those principles which are really the most common in nature.[6]

XXIII. There is no small difference between the idols of the human mind and the ideas of the Divine mind — that is to say, between certain idle dogmas and the real stamp and impression of created objects, as they are found in nature.

XXIV. Axioms determined upon in argument can never assist in the discovery of new effects; for the subtilty of nature is vastly superior to that of argument. But axioms properly and regularly abstracted from particulars easily point out and define new particulars, and therefore impart activity to the sciences.

XXV. The axioms now in use are derived from a scanty handful, as it were, of experience, and a few particulars of frequent occurrence, whence they are of much the same dimensions or extent as their origin. And if any neglected or unknown instance occurs, the axiom is saved by some frivolous distinction, when it would be more consistent with truth to amend it.

XXVI. We are wont, for the sake of distinction, to call that human reasoning which we apply to nature the anticipation of nature (as being rash and premature), and that which is properly deduced from things the interpretation of nature.

XXVII. Anticipations are sufficiently powerful in producing unanimity, for if men were all to become even uniformly mad, they might agree tolerably well with each other.

XXVIII. Anticipations again, will be assented to much more readily than interpretations, because being deduced from a few instances, and these principally of familiar occurrence, they immediately hit the understanding and satisfy the imagination; while, on the contrary, interpretations, being deduced from various subjects, and these widely dispersed, cannot suddenly strike the understanding, so that in common estimation they must appear difficult and discordant, and almost like the mysteries of faith.

XXIX. In sciences founded on opinions and dogmas, it is right to make use of anticipations and logic if you wish to force assent rather than things.

XXX. If all the capacities of all ages should unite and combine and transmit their labors, no great progress will be made in learning by anticipations, because the radical errors, and those which occur in the first process of the mind, are not cured by the excellence of subsequent means and remedies.

XXXI. It is in vain to expect any great progress in the sciences by the superinducing or ingrafting new matters upon old. An instauration must be made from the very foundations, if we do not wish to revolve forever in a circle, making only some slight and contemptible progress.

XXXII. The ancient authors and all others are left in undisputed possession of their honors; for we enter into no comparison of capacity or talent, but of method, and assume the part of a guide rather than of a critic.

XXXIII. To speak plainly, no correct judgment can be formed either of our method or its discoveries by those anticipations which are now in common use; for it is not to be required of us to submit ourselves to the judgment of the very method we ourselves arraign.

XXXIV. Nor is it an easy matter to deliver and explain our sentiments; for those things which are in themselves new can yet be only understood from some analogy to what is old.

XXXV. Alexander Borgia[7] said of the expedition of the French into Italy that they came with chalk in their hands to mark up their lodgings, and not with weapons to force their passage. Even so do we wish our philosophy to make its way quietly into those minds that are fit for it, and of good capacity; for we have no need of contention where we differ in first principles, and in our very notions, and even in our forms of demonstration.

XXXVI. We have but one simple method of delivering our sentiments, namely, we must bring men to particulars and their regular series and order, and they must for a while renounce their notions, and begin to form an acquaintance with things.

XXXVII. Our method and that of the sceptics[8] agree in some respects at first setting out, but differ most widely, and are completely opposed to each other in their conclusion; for they roundly assert that nothing can be known; we, that but

a small part of nature can be known, by the present method; their next step, however, is to destroy the authority of the senses and understanding, while we invent and supply them with assistance.

XXXVIII. The idols and false notions which have already preoccupied the human understanding, and are deeply rooted in it, not only so beset men's minds that they become difficult of access, but even when access is obtained will again meet and trouble us in the instauration of the sciences, unless mankind when forewarned guard themselves with all possible care against them.

XXXIX. Four species of idols beset the human mind,[9] to which (for distinction's sake) we have assigned names, calling the first Idols of the Tribe, the second Idols of the Den, the third Idols of the Market, the fourth Idols of the Theatre.

XL. The formation of notions and axioms on the foundation of true induction is the only fitting remedy by which we can ward off and expel these idols. It is, however, of great service to point them out; for the doctrine of idols bears the same relation to the interpretation of nature as that of the confutation of sophisms does to common logic.[10]

XLI. The idols of the tribe are inherent in human nature and the very tribe or race of man; for man's sense is falsely asserted to be the standard of things; on the contrary, all the perceptions both of the senses and the mind bear reference to man and not to the universe, and the human mind resembles those uneven mirrors which impart their own properties to different objects, from which rays are emitted and distort and disfigure them.[11]

XLII. The idols of the den are those of each individual; for everybody (in addition to the errors common to the race of man) has his own individual den or cavern, which intercepts and corrupts the light of nature, either from his own peculiar and singular disposition, or from his education and intercourse with others, or from his reading, and the authority acquired by those whom he reverences and admires, or from the different impressions produced on the mind, as it happens to be preoccupied and predisposed, or equable and tranquil, and the like; so that the spirit of man (according to its several dispositions), is variable,

confused, and as it were actuated by chance; and Heraclitus said well that men search for knowledge in lesser worlds, and not in the greater or common world.

XLIII. There are also idols formed by the reciprocal intercourse and society of man with man, which we call idols of the market, from the commerce and association of men with each other; for men converse by means of language, but words are formed at the will of the generality, and there arises from a bad and unapt formation of words a wonderful obstruction to the mind. Nor can the definitions and explanations with which learned men are wont to guard and protect themselves in some instances afford a complete remedy — words still manifestly force the understanding, throw everything into confusion, and lead mankind into vain and innumerable controversies and fallacies.

XLIV. Lastly, there are idols which have crept into men's minds from the various dogmas of peculiar systems of philosophy, and also from the perverted rules of demonstration, and these we denominate idols of the theatre: for we regard all the systems of philosophy hitherto received or imagined, as so many plays brought out and performed, creating fictitious and theatrical worlds. Nor do we speak only of the present systems, or of the philosophy and sects of the ancients, since numerous other plays of a similar nature can be still composed and made to agree with each other, the causes of the most opposite errors being generally the same. Nor, again, do we allude merely to general systems, but also to many elements and axioms of sciences which have become inveterate by tradition, implicit credence, and neglect. We must, however, discuss each species of idols more fully and distinctly in order to guard the human understanding against them.

XLV. The human understanding, from its peculiar nature, easily supposes a greater degree of order and equality in things than it really finds; and although many things in nature be *sui generis* and most irregular, will yet invent parallels and conjugates and relatives, where no such thing is. Hence the fiction, that all celestial bodies move in perfect circles, thus rejecting entirely spiral and serpentine lines (except as explanatory terms).[12] Hence also the element of fire is introduced with its peculiar orbit,[13] to keep square with those other three which

are objects of our senses. The relative rarity of the elements (as they are called) is arbitrarily made to vary in tenfold progression, with many other dreams of the like nature.[14] Nor is this folly confined to theories, but it is to be met with even in simple notions.

XLVI. The human understanding, when any proposition has been once laid down (either from general admission and belief, or from the pleasure it affords), forces everything else to add fresh support and confirmation; and although most cogent and abundant instances may exist to the contrary, yet either does not observe or despises them, or gets rid of and rejects them by some distinction, with violent and injurious prejudice, rather than sacrifice the authority of its first conclusions. It was well answered by him[15] who was shown in a temple the votive tablets suspended by such as had escaped the peril of shipwreck, and was pressed as to whether he would then recognize the power of the gods, by an inquiry, But where are the portraits of those who have perished in spite of their vows? All superstition is much the same, whether it be that of astrology, dreams, omens, retributive judgment, or the like, in all of which the deluded believers observe events which are fulfilled, but neglect and pass over their failure, though it be much more common. But this evil insinuates itself still more craftily in philosophy and the sciences, in which a settled maxim vitiates and governs every other circumstance, though the latter be much more worthy of confidence. Besides, even in the absence of that eagerness and want of thought (which we have mentioned), it is the peculiar and perpetual error of the human understanding to be more moved and excited by affirmatives than negatives, whereas it ought duly and regularly to be impartial; nay, in establishing any true axiom the negative instance is the most powerful.

XLVII. The human understanding is most excited by that which strikes and enters the mind at once and suddenly, and by which the imagination is immediately filled and inflated. It then begins almost imperceptibly to conceive and suppose that everything is similar to the few objects which have taken possession of the mind, while it is very slow and unfit for the transition to the

remote and heterogeneous instances by which axioms are tried as by fire, unless the office be imposed upon it by severe regulations and a powerful authority.

XLVIII. The human understanding is active and cannot halt or rest, but even, though without effect, still presses forward. Thus we cannot conceive of any end or external boundary of the world, and it seems necessarily to occur to us that there must be something beyond. Nor can we imagine how eternity has flowed on down to the present day, since the usually received distinction of an infinity, a parte ante and a parte post,[16] cannot hold good; for it would thence follow that one infinity is greater than another, and also that infinity is wasting away and tending to an end. There is the same difficulty in considering the infinite divisibility of lines, arising from the weakness of our minds, which weakness interferes to still greater disadvantage with the discovery of causes; for although the greatest generalities in nature must be positive, just as they are found, and in fact not causable, yet the human understanding, incapable of resting, seeks for something more intelligible. Thus, however, while aiming at further progress, it falls back to what is actually less advanced, namely, final causes; for they are clearly more allied to man's own nature, than the system of the universe, and from this source they have wonderfully corrupted philosophy. But he would be an unskilful and shallow philosopher who should seek for causes in the greatest generalities, and not be anxious to discover them in subordinate objects.

XLIX. The human understanding resembles not a dry light, but admits a tincture of the will[17] and passions, which generate their own system accordingly; for man always believes more readily that which he prefers. He, therefore, rejects difficulties for want of patience in investigation; sobriety, because it limits his hope; the depths of nature, from superstition; the light of experiment, from arrogance and pride, lest his mind should appear to be occupied with common and varying objects; paradoxes, from a fear of the opinion of the vulgar; in short, his feelings imbue and corrupt his understanding in innumerable and sometimes imperceptible ways.

L. But by far the greatest impediment and aberration of the human understanding proceeds from the dulness, incompetence, and errors of the

senses; since whatever strikes the senses preponderates over everything, however superior, which does not immediately strike them. Hence contemplation mostly ceases with sight, and a very scanty, or perhaps no regard is paid to invisible objects. The entire operation, therefore, of spirits inclosed in tangible bodies[18] is concealed, and escapes us. All that more delicate change of formation in the parts of coarser substances (vulgarly called alteration, but in fact a change of position in the smallest particles) is equally unknown; and yet, unless the two matters we have mentioned be explored and brought to light, no great effect can be produced in nature. Again, the very nature of common air, and all bodies of less density (of which there are many) is almost unknown; for the senses are weak and erring, nor can instruments be of great use in extending their sphere or acuteness — all the better interpretations of nature are worked out by instances, and fit and apt experiments, where the senses only judge of the experiment, the experiment of nature and the thing itself.

LI. The human understanding is, by its own nature, prone to abstraction, and supposes that which is fluctuating to be fixed. But it is better to dissect than abstract nature: such was the method employed by the school of Democritus,[19] which made greater progress in penetrating nature than the rest. It is best to consider matter, its conformation, and the changes of that conformation, its own action,[20] and the law of this action or motion; for forms are a mere fiction of the human mind, unless you will call the laws of action by that name.[21]

LII. Such are the idols of the tribe, which arise either from the uniformity of the constitution of man’s spirit, or its prejudices, or its limited faculties or restless agitation, or from the interference of the passions, or the incompetence of the senses, or the mode of their impressions.

LIII. The idols of the den derive their origin from the peculiar nature of each individual’s mind and body, and also from education, habit, and accident; and although they be various and manifold, yet we will treat of some that require the greatest caution, and exert the greatest power in polluting the understanding.

LIV. Some men become attached to particular sciences and contemplations, either from supposing themselves the authors and inventors of them, or from having bestowed the greatest pains upon such subjects, and thus become most habituated to them.[22] If men of this description apply themselves to philosophy and contemplations of a universal nature, they wrest and corrupt them by their preconceived fancies, of which Aristotle affords us a single instance, who made his natural philosophy completely subservient to his logic, and thus rendered it little more than useless and disputatious. The chemists, again, have formed a fanciful philosophy with the most confined views, from a few experiments of the furnace. Gilbert,[23] too, having employed himself most assiduously in the consideration of the magnet, immediately established a system of philosophy to coincide with his favorite pursuit.

LV. The greatest and, perhaps, radical distinction between different men's dispositions for philosophy and the sciences is this, that some are more vigorous and active in observing the differences of things, others in observing their resemblances; for a steady and acute disposition can fix its thoughts, and dwell upon and adhere to a point, through all the refinements of differences, but those that are sublime and discursive recognize and compare even the most delicate and general resemblances; each of them readily falls into excess, by catching either at nice distinctions or shadows of resemblance.

LVI. Some dispositions evince an unbounded admiration of antiquity, others eagerly embrace novelty, and but few can preserve the just medium, so as neither to tear up what the ancients have correctly laid down, nor to despise the just innovations of the moderns. But this is very prejudicial to the sciences and philosophy, and instead of a correct judgment we have but the factions of the ancients and moderns. Truth is not to be sought in the good fortune of any particular conjuncture of time, which is uncertain, but in the light of nature and experience, which is eternal. Such factions, therefore, are to be abjured, and the understanding must not allow them to hurry it on to assent.

LVII. The contemplation of nature and of bodies in their individual form distracts and weakens the understanding; but the contemplation of nature and of

bodies in their general composition and formation stupefies and relaxes it. We have a good instance of this in the school of Leucippus and Democritus compared with others, for they applied themselves so much to particulars as almost to neglect the general structure of things, while the others were so astounded while gazing on the structure that they did not penetrate the simplicity of nature. These two species of contemplation must, therefore, be interchanged, and each employed in its turn, in order to render the understanding at once penetrating and capacious, and to avoid the inconveniences we have mentioned, and the idols that result from them.

LVIII. Let such, therefore, be our precautions in contemplation, that we may ward off and expel the idols of the den, which mostly owe their birth either to some predominant pursuit, or, secondly, to an excess in synthesis and analysis, or, thirdly, to a party zeal in favor of certain ages, or, fourthly, to the extent or narrowness of the subject. In general, he who contemplates nature should suspect whatever particularly takes and fixes his understanding, and should use so much the more caution to preserve it equable and unprejudiced.

LIX. The idols of the market are the most troublesome of all, those namely which have entwined themselves round the understanding from the associations of words and names. For men imagine that their reason governs words, while, in fact, words react upon the understanding; and this has rendered philosophy and the sciences sophistical and inactive. Words are generally formed in a popular sense, and define things by those broad lines which are most obvious to the vulgar mind; but when a more acute understanding or more diligent observation is anxious to vary those lines, and to adapt them more accurately to nature, words oppose it. Hence the great and solemn disputes of learned men often terminate in controversies about words and names, in regard to which it would be better (imitating the caution of mathematicians) to proceed more advisedly in the first instance, and to bring such disputes to a regular issue by definitions. Such definitions, however, cannot remedy the evil in natural and material objects, because they consist themselves of words, and these words produce others;[24] so that we must necessarily have recourse to particular instances, and

their regular series and arrangement, as we shall mention when we come to the mode and scheme of determining notions and axioms.

LX. The idols imposed upon the understanding by words are of two kinds. They are either the names of things which have no existence (for as some objects are from inattention left without a name, so names are formed by fanciful imaginations which are without an object), or they are the names of actual objects, but confused, badly defined, and hastily and irregularly abstracted from things. Fortune, the *primum mobile*, the planetary orbits,[25] the element of fire, and the like fictions, which owe their birth to futile and false theories, are instances of the first kind. And this species of idols is removed with greater facility, because it can be exterminated by the constant refutation or the desuetude of the theories themselves. The others, which are created by vicious and unskilful abstraction, are intricate and deeply rooted. Take some word, for instance, as moist, and let us examine how far the different significations of this word are consistent. It will be found that the word moist is nothing but a confused sign of different actions admitted of no settled and defined uniformity. For it means that which easily diffuses itself over another body; that which is indeterminable and cannot be brought to a consistency; that which yields easily in every direction; that which is easily divided and dispersed; that which is easily united and collected; that which easily flows and is put in motion; that which easily adheres to, and wets another body; that which is easily reduced to a liquid state though previously solid. When, therefore, you come to predicate or impose this name, in one sense flame is moist, in another air is not moist, in another fine powder is moist, in another glass is moist; so that it is quite clear that this notion is hastily abstracted from water only, and common ordinary liquors, without any due verification of it.

There are, however, different degrees of distortion and mistake in words. One of the least faulty classes is that of the names of substances, particularly of the less abstract and more defined species (those then of chalk and mud are good, of earth bad); words signifying actions are more faulty, as to generate, to corrupt, to change; but the most faulty are those denoting qualities (except the immediate

objects of sense), as heavy, light, rare, dense. Yet in all of these there must be some notions a little better than others, in proportion as a greater or less number of things come before the senses.

LXI. The idols of the theatre are not innate, nor do they introduce themselves secretly into the understanding, but they are manifestly instilled and cherished by the fictions of theories and depraved rules of demonstration. To attempt, however, or undertake their confutation would not be consistent with our declarations. For since we neither agree in our principles nor our demonstrations, all argument is out of the question. And it is fortunate that the ancients are left in possession of their honors. We detract nothing from them, seeing our whole doctrine relates only to the path to be pursued. The lame (as they say) in the path outstrip the swift who wander from it, and it is clear that the very skill and swiftness of him who runs not in the right direction must increase his aberration.

Our method of discovering the sciences is such as to leave little to the acuteness and strength of wit, and indeed rather to level wit and intellect. For as in the drawing of a straight line, or accurate circle by the hand, much depends on its steadiness and practice, but if a ruler or compass be employed there is little occasion for either; so it is with our method. Although, however, we enter into no individual confutations, yet a little must be said, first, of the sects and general divisions of these species of theories; secondly, something further to show that there are external signs of their weakness; and, lastly, we must consider the causes of so great a misfortune, and so long and general a unanimity in error, that we may thus render the access to truth less difficult, and that the human understanding may the more readily be purified, and brought to dismiss its idols.

LXII. The idols of the theatre, or of theories, are numerous, and may, and perhaps will, be still more so. For unless men’s minds had been now occupied for many ages in religious and theological considerations, and civil governments (especially monarchies), had been averse to novelties of that nature even in theory (so that men must apply to them with some risk and injury to their own fortunes, and not only without reward, but subject to contumely and envy), there is no doubt that many other sects of philosophers and theorists would have been

introduced, like those which formerly flourished in such diversified abundance among the Greeks. For as many imaginary theories of the heavens can be deduced from the phenomena of the sky, so it is even more easy to found many dogmas upon the phenomena of philosophy — and the plot of this our theatre resembles those of the poetical, where the plots which are invented for the stage are more consistent, elegant, and pleasurable than those taken from real history.

In general, men take for the groundwork of their philosophy either too much from a few topics, or too little from many; in either case their philosophy is founded on too narrow a basis of experiment and natural history, and decides on too scanty grounds. For the theoretic philosopher seizes various common circumstances by experiment, without reducing them to certainty or examining and frequently considering them, and relies for the rest upon meditation and the activity of his wit.

There are other philosophers who have diligently and accurately attended to a few experiments, and have thence presumed to deduce and invent systems of philosophy, forming everything to conformity with them.

A third set, from their faith and religious veneration, introduce theology and traditions; the absurdity of some among them having proceeded so far as to seek and derive the sciences from spirits and genii. There are, therefore, three sources of error and three species of false philosophy; the sophistic, empiric, and superstitious.

LXIII. Aristotle affords the most eminent instance of the first; for he corrupted natural philosophy by logic — thus he formed the world of categories, assigned to the human soul, the noblest of substances, a genus determined by words of secondary operation, treated of density and rarity (by which bodies occupy a greater or lesser space), by the frigid distinctions of action and power, asserted that there was a peculiar and proper motion in all bodies, and that if they shared in any other motion, it was owing to an external moving cause, and imposed innumerable arbitrary distinctions upon the nature of things; being everywhere more anxious as to definitions in teaching and the accuracy of the wording of his propositions, than the internal truth of things. And this is best

shown by a comparison of his philosophy with the others of greatest repute among the Greeks. For the similar parts of Anaxagoras, the atoms of Leucippus and Democritus, the heaven and earth of Parmenides, the discord and concord of Empedocles,[26] the resolution of bodies into the common nature of fire, and their condensation according to Heraclitus, exhibit some sprinkling of natural philosophy, the nature of things, and experiment; while Aristotle's physics are mere logical terms, and he remodelled the same subject in his metaphysics under a more imposing title, and more as a realist than a nominalist. Nor is much stress to be laid on his frequent recourse to experiment in his books on animals, his problems, and other treatises; for he had already decided, without having properly consulted experience as the basis of his decisions and axioms, and after having so decided, he drags experiment along as a captive constrained to accommodate herself to his decisions: so that he is even more to be blamed than his modern followers (of the scholastic school) who have deserted her altogether.

LXIV. The empiric school produces dogmas of a more deformed and monstrous nature than the sophistic or theoretic school; not being founded in the light of common notions (which, however poor and superstitious, is yet in a manner universal, and of a general tendency), but in the confined obscurity of a few experiments. Hence this species of philosophy appears probable, and almost certain to those who are daily practiced in such experiments, and have thus corrupted their imagination, but incredible and futile to others. We have a strong instance of this in the alchemists and their dogmas; it would be difficult to find another in this age, unless perhaps in the philosophy of Gilbert.[27] We could not, however, neglect to caution others against this school, because we already foresee and augur, that if men be hereafter induced by our exhortations to apply seriously to experiments (bidding farewell to the sophistic doctrines), there will then be imminent danger from empirics, owing to the premature and forward haste of the understanding, and its jumping or flying to generalities and the principles of things. We ought, therefore, already to meet the evil.

LXV. The corruption of philosophy by the mixing of it up with superstition and theology, is of a much wider extent, and is most injurious to it both as a whole and in parts. For the human understanding is no less exposed to the impressions of fancy, than to those of vulgar notions. The disputatious and sophistic school entraps the understanding, while the fanciful, bombastic, and, as it were, poetical school, rather flatters it.

There is a clear example of this among the Greeks, especially in Pythagoras, where, however, the superstition is coarse and overcharged, but it is more dangerous and refined in Plato and his school. This evil is found also in some branches of other systems of philosophy, where it introduces abstracted forms, final and first causes, omitting frequently the intermediate and the like. Against it we must use the greatest caution; for the apotheosis of error is the greatest evil of all, and when folly is worshipped, it is, as it were, a plague spot upon the understanding. Yet some of the moderns have indulged this folly with such consummate inconsiderateness, that they have endeavored to build a system of natural philosophy on the first chapter of Genesis, the book of Job, and other parts of Scripture; seeking thus the dead among the living.[28] And this folly is the more to be prevented and restrained, because not only fantastical philosophy, but heretical religion spring from the absurd mixture of matters divine and human. It is therefore most wise soberly to render unto faith the things that are faith's.

LXVI. Having spoken of the vicious authority of the systems founded either on vulgar notions, or on a few experiments, or on superstition, we must now consider the faulty subjects for contemplation, especially in natural philosophy. The human understanding is perverted by observing the power of mechanical arts, in which bodies are very materially changed by composition or separation, and is induced to suppose that something similar takes place in the universal nature of things. Hence the fiction of elements, and their co-operation in forming natural bodies.[29] Again, when man reflects upon the entire liberty of nature, he meets with particular species of things, as animals, plants, minerals, and is thence easily led to imagine that there exist in nature certain primary forms which she strives to produce, and that all variation from them arises from some

impediment or error which she is exposed to in completing her work, or from the collision or metamorphosis of different species. The first hypothesis has produced the doctrine of elementary properties, the second that of occult properties and specific powers; and both lead to trifling courses of reflection, in which the mind acquiesces, and is thus diverted from more important subjects. But physicians exercise a much more useful labor in the consideration of the secondary qualities of things, and the operations of attraction, repulsion, attenuation, inspissation, dilatation, astringency, separation, maturation, and the like; and would do still more if they would not corrupt these proper observations by the two systems I have alluded to, of elementary qualities and specific powers, by which they either reduce the secondary to first qualities, and their subtile and immeasurable composition, or at any rate neglect to advance by greater and more diligent observation to the third and fourth qualities, thus terminating their contemplation prematurely. Nor are these powers (or the like) to be investigated only among the medicines for the human body, but also in all changes of other natural bodies.

A greater evil arises from the contemplation and investigation rather of the stationary principles of things from which, than of the active by which things themselves are created. For the former only serve for discussion, the latter for practice. Nor is any value to be set on those common differences of motion which are observed in the received system of natural philosophy, as generation, corruption, augmentation, diminution, alteration, and translation. For this is their meaning: if a body, unchanged in other respects, is moved from its place, this is translation; if the place and species be given, but the quantity changed, it is alteration; but if, from such a change, the mass and quantity of the body do not continue the same, this is the motion of augmentation and diminution; if the change be continued so as to vary the species and substance, and transfuse them to others, this is generation and corruption. All this is merely popular, and by no means penetrates into nature; and these are but the measures and bounds of motion, and not different species of it; they merely suggest how far, and not how or whence. For they exhibit neither the affections of bodies nor the process of

their parts, but merely establish a division of that motion, which coarsely exhibits to the senses matter in its varied form. Even when they wish to point out something relative to the causes of motion, and to establish a division of them, they most absurdly introduce natural and violent motion, which is also a popular notion, since every violent motion is also in fact natural, that is to say, the external efficient puts nature in action in a different manner to that which she had previously employed.

But if, neglecting these, any one were, for instance, to observe that there is in bodies a tendency of adhesion, so as not to suffer the unity of nature to be completely separated or broken, and a *vacuum*[30] to be formed, or that they have a tendency to return to their natural dimensions or tension, so that, if compressed or extended within or beyond it, they immediately strive to recover themselves, and resume their former volume and extent; or that they have a tendency to congregate into masses with similar bodies — the dense, for instance, toward the circumference of the earth, the thin and rare toward that of the heavens. These and the like are true physical genera of motions, but the others are clearly logical and scholastic, as appears plainly from a comparison of the two.

Another considerable evil is, that men in their systems and contemplations bestow their labor upon the investigation and discussion of the principles of things and the extreme limits of nature, although all utility and means of action consist in the intermediate objects. Hence men cease not to abstract nature till they arrive at potential and shapeless matter,[31] and still persist in their dissection, till they arrive at atoms; and yet were all this true, it would be of little use to advance man’s estate.

LXVII. The understanding must also be cautioned against the intemperance of systems, so far as regards its giving or withholding its assent; for such intemperance appears to fix and perpetuate idols, so as to leave no means of removing them.

These excesses are of two kinds. The first is seen in those who decide hastily, and render the sciences positive and dictatorial. The other in those who have introduced scepticism, and vague unbounded inquiry. The former subdues, the

latter enervates the understanding. The Aristotelian philosophy, after destroying other systems (as the Ottomans[32] do their brethren) by its disputatious confutations, decided upon everything, and Aristotle himself then raises up questions at will, in order to settle them; so that everything should be certain and decided, a method now in use among his successors.

The school of Plato introduced scepticism, first, as it were in joke and irony, from their dislike to Protagoras, Hippias,[33] and others, who were ashamed of appearing not to doubt upon any subject. But the new academy dogmatized in their scepticism, and held it as their tenet. Although this method be more honest than arbitrary decision (for its followers allege that they by no means confound all inquiry, like Pyrrho and his disciples, but hold doctrines which they can follow as probable, though they cannot maintain them to be true), yet when the human mind has once despaired of discovering truth, everything begins to languish. Hence men turn aside into pleasant controversies and discussions, and into a sort of wandering over subjects rather than sustain any rigorous investigation. But as we observed at first, we are not to deny the authority of the human senses and understanding, although weak, but rather to furnish them with assistance.

LXVIII. We have now treated of each kind of idols, and their qualities, all of which must be abjured and renounced with firm and solemn resolution, and the understanding must be completely freed and cleared of them, so that the access to the kingdom of man, which is founded on the sciences, may resemble that to the kingdom of heaven, where no admission is conceded except to children.

LXIX. Vicious demonstrations are the muniments and support of idols, and those which we possess in logic, merely subject and enslave the world to human thoughts, and thoughts to words. But demonstrations are in some manner themselves systems of philosophy and science; for such as they are, and accordingly as they are regularly or improperly established, such will be the resulting systems of philosophy and contemplation. But those which we employ in the whole process leading from the senses and things to axioms and conclusions, are fallacious and incompetent. This process is fourfold, and the

errors are in equal number. In the first place the impressions of the senses are erroneous, for they fail and deceive us. We must supply defects by substitutions, and fallacies by their correction. Secondly, notions are improperly abstracted from the senses, and indeterminate and confused when they ought to be the reverse. Thirdly, the induction that is employed is improper, for it determines the principles of sciences by simple enumeration,[34] without adopting exclusions and resolutions, or just separations of nature. Lastly, the usual method of discovery and proof, by first establishing the most general propositions, then applying and proving the intermediate axioms according to them, is the parent of error and the calamity of every science. But we will treat more fully of that which we now slightly touch upon, when we come to lay down the true way of interpreting nature, after having gone through the above expiatory process and purification of the mind.

LXX. But experience is by far the best demonstration, provided it adhere to the experiment actually made, for if that experiment be transferred to other subjects apparently similar, unless with proper and methodical caution it becomes fallacious. The present method of experiment is blind and stupid; hence men wandering and roaming without any determined course, and consulting mere chance, are hurried about to various points, and advance but little — at one time they are happy, at another their attention is distracted, and they always find that they want something further. Men generally make their experiments carelessly, and as it were in sport, making some little variation in a known experiment, and then if they fail they become disgusted and give up the attempt; nay, if they set to work more seriously, steadily, and assiduously, yet they waste all their time on probing some solitary matter, as Gilbert on the magnet, and the alchemists on gold. But such conduct shows their method to be no less unskilful than mean; for nobody can successfully investigate the nature of any object by considering that object alone; the inquiry must be more generally extended.

Even when men build any science and theory upon experiment, yet they almost always turn with premature and hasty zeal to practice, not merely on account of the advantage and benefit to be derived from it, but in order to seize

upon some security in a new undertaking of their not employing the remainder of their labor unprofitably, and by making themselves conspicuous, to acquire a greater name for their pursuit. Hence, like Atalanta, they leave the course to pick up the golden apple, interrupting their speed, and giving up the victory. But in the true course of experiment, and in extending it to new effects, we should imitate the Divine foresight and order; for God on the first day only created light, and assigned a whole day to that work without creating any material substance thereon. In like manner we must first, by every kind of experiment, elicit the discovery of causes and true axioms, and seek for experiments which may afford light rather than profit. Axioms, when rightly investigated and established, prepare us not for a limited but abundant practice, and bring in their train whole troops of effects. But we will treat hereafter of the ways of experience, which are not less beset and interrupted than those of judgment; having spoken at present of common experience only as a bad species of demonstration, the order of our subject now requires some mention of those external signs of the weakness in practice of the received systems of philosophy and contemplation[35] which we referred to above, and of the causes of a circumstance at first sight so wonderful and incredible. For the knowledge of these external signs prepares the way for assent, and the explanation of the causes removes the wonder; and these two circumstances are of material use in extirpating more easily and gently the idols from the understanding.

LXXI. The sciences we possess have been principally derived from the Greeks; for the addition of the Roman, Arabic, or more modern writers, are but few and of small importance, and such as they are, are founded on the basis of Greek invention. But the wisdom of the Greeks was professional and disputatious, and thus most adverse to the investigation of truth. The name, therefore, of sophists, which the contemptuous spirit of those who deemed themselves philosophers, rejected and transferred to the rhetoricians — Gorgias,[36] Protagoras, Hippias, Polus — might well suit the whole tribe, such as Plato, Aristotle, Zeno, Epicurus, Theophrastus, and their successors — Chrysippus, Carneades, and the rest. There was only this difference between

them — the former were mercenary vagabonds, travelling about to different states, making a show of their wisdom, and requiring pay; the latter more dignified and noble, in possession of fixed habitations, opening schools, and teaching philosophy gratuitously. Both, however (though differing in other respects), were professorial, and reduced every subject to controversy, establishing and defending certain sects and dogmas of philosophy, so that their doctrines were nearly (what Dionysius not unaptly objected to Plato) the talk of idle old men to ignorant youths. But the more ancient Greeks, as Empedocles, Anaxagoras, Leucippus, Democritus, Parmenides, Heraclitus, Xenophanes, Philolaus, and the rest[37] (for I omit Pythagoras as being superstitious), did not (that we are aware) open schools, but betook themselves to the investigation of truth with greater silence and with more severity and simplicity, that is, with less affectation and ostentation. Hence in our opinion they acted more advisedly, however their works may have been eclipsed in course of time by those lighter productions which better correspond with and please the apprehensions and passions of the vulgar; for time, like a river,[38] bears down to us that which is light and inflated, and sinks that which is heavy and solid. Nor were even these more ancient philosophers free from the national defect, but inclined too much to the ambition and vanity of forming a sect, and captivating public opinion, and we must despair of any inquiry after truth when it condescends to such trifles. Nor must we omit the opinion, or rather prophecy, of an Egyptian priest with regard to the Greeks, that they would forever remain children, without any antiquity of knowledge or knowledge of antiquity; for they certainly have this in common with children, that they are prone to talking, and incapable of generation, their wisdom being loquacious and unproductive of effects. Hence the external signs derived from the origin and birthplace of our present philosophy are not favorable.

LXXII. Nor are those much better which can be deduced from the character of the time and age, than the former from that of the country and nation; for in that age the knowledge both of time and of the world was confined and meagre, which is one of the worst evils for those who rely entirely on experience — they

had not a thousand years of history worthy of that name, but mere fables and ancient traditions; they were acquainted with but a small portion of the regions and countries of the world, for they indiscriminately called all nations situated far toward the north Scythians, all those to the west Celts; they knew nothing of Africa but the nearest part of Ethiopia, or of Asia beyond the Ganges, and had not even heard any sure and clear tradition of the regions of the New World. Besides, a vast number of climates and zones, in which innumerable nations live and breathe, were pronounced by them to be uninhabitable; nay, the travels of Democritus, Plato, and Pythagoras, which were not extensive, but rather mere excursions from home, were considered as something vast. But in our times many parts of the New World, and every extremity of the Old, are well known, and the mass of experiments has been infinitely increased; wherefore, if external signs were to be taken from the time of the nativity or procreation (as in astrology), nothing extraordinary could be predicted of these early systems of philosophy.

LXXIII. Of all signs there is none more certain or worthy than that of the fruits produced, for the fruits and effects are the sureties and vouchers, as it were, for the truth of philosophy. Now, from the systems of the Greeks, and their subordinate divisions in particular branches of the sciences during so long a period, scarcely one single experiment can be culled that has a tendency to elevate or assist mankind, and can be fairly set down to the speculations and doctrines of their philosophy. Celsus candidly and wisely confesses as much, when he observes that experiments were first discovered in medicine, and that men afterward built their philosophical systems upon them, and searched for and assigned causes, instead of the inverse method of discovering and deriving experiments from philosophy and the knowledge of causes; it is not, therefore, wonderful that the Egyptians (who bestowed divinity and sacred honors on the authors of new inventions) should have consecrated more images of brutes than of men, for the brutes by their natural instinct made many discoveries, while men derived but few from discussion and the conclusions of reason.

The industry of the alchemists has produced some effect, by chance, however, and casualty, or from varying their experiments (as mechanics also do), and not from any regular art or theory, the theory they have imagined rather tending to disturb than to assist experiment. Those, too, who have occupied themselves with natural magic (as they term it) have made but few discoveries, and those of small import, and bordering on imposture; for which reason, in the same manner as we are cautioned by religion to show our faith by our works, we may very properly apply the principle to philosophy, and judge of it by its works, accounting that to be futile which is unproductive, and still more so if, instead of grapes and olives, it yield but the thistle and thorns of dispute and contention.

LXXIV. Other signs may be selected from the increase and progress of particular systems of philosophy and the sciences; for those which are founded on nature grow and increase, while those which are founded on opinion change and increase not. If, therefore, the theories we have mentioned were not like plants, torn up by the roots, but grew in the womb of nature, and were nourished by her, that which for the last two thousand years has taken place would never have happened, namely, that the sciences still continue in their beaten track, and nearly stationary, without having received any important increase, nay, having, on the contrary, rather bloomed under the hands of their first author, and then faded away. But we see that the case is reversed in the mechanical arts, which are founded on nature and the light of experience, for they (as long as they are popular) seem full of life, and uninterruptedly thrive and grow, being at first rude, then convenient, lastly polished, and perpetually improved.

LXXV. There is yet another sign (if such it may be termed, being rather an evidence, and one of the strongest nature), namely, the actual confession of those very authorities whom men now follow; for even they who decide on things so daringly, yet at times, when they reflect, betake themselves to complaints about the subtilty of nature, the obscurity of things, and the weakness of man’s wit. If they would merely do this, they might perhaps deter those who are of a timid disposition from further inquiry, but would excite and stimulate those of a more active and confident turn to further advances. They are not, however, satisfied

with confessing so much of themselves, but consider everything which has been either unknown or unattempted by themselves or their teachers, as beyond the limits of possibility, and thus, with most consummate pride and envy, convert the defects of their own discoveries into a calumny on nature and a source of despair to every one else. Hence arose the New Academy, which openly professed scepticism,[39] and consigned mankind to eternal darkness; hence the notion that forms, or the true differences of things (which are in fact the laws of simple action), are beyond man's reach, and cannot possibly be discovered; hence those notions in the active and operative branches, that the heat of the sun and of fire are totally different, so as to prevent men from supposing that they can elicit or form, by means of fire, anything similar to the operations of nature; and again, that composition only is the work of man and mixture of nature, so as to prevent men from expecting the generation or transformation of natural bodies by art. Men will, therefore, easily allow themselves to be persuaded by this sign not to engage their fortunes and labor in speculations, which are not only desperate, but actually devoted to desperation.

LXXVI. Nor should we omit the sign afforded by the great dissension formerly prevalent among philosophers, and the variety of schools, which sufficiently show that the way was not well prepared that leads from the senses to the understanding, since the same groundwork of philosophy (namely, the nature of things), was torn and divided into such widely differing and multifarious errors. And although in these days the dissensions and differences of opinions with regard to first principles and entire systems are nearly extinct,[40] yet there remain innumerable questions and controversies with regard to particular branches of philosophy. So that it is manifest that there is nothing sure or sound either in the systems themselves or in the methods of demonstration.[41]

LXXVII. With regard to the supposition that there is a general unanimity as to the philosophy of Aristotle, because the other systems of the ancients ceased and became obsolete on its promulgation, and nothing better has been since discovered; whence it appears that it is so well determined and founded, as to have united the suffrages of both ages; we will observe — 1st. That the notion of

other ancient systems having ceased after the publication of the works of Aristotle is false, for the works of the ancient philosophers subsisted long after that event, even to the time of Cicero, and the subsequent ages. But at a later period, when human learning had, as it were, been wrecked in the inundation of barbarians into the Roman empire, then the systems of Aristotle and Plato were preserved in the waves of ages, like planks of a lighter and less solid nature. 2d. The notion of unanimity, on a clear inspection, is found to be fallacious. For true unanimity is that which proceeds from a free judgment, arriving at the same conclusion, after an investigation of the fact. Now, by far the greater number of those who have assented to the philosophy of Aristotle, have bound themselves down to it from prejudice and the authority of others, so that it is rather obsequiousness and concurrence than unanimity. But even if it were real and extensive unanimity, so far from being esteemed a true and solid confirmation, it should even lead to a violent presumption to the contrary. For there is no worse augury in intellectual matters than that derived from unanimity, with the exception of divinity and politics, where suffrages are allowed to decide. For nothing pleases the multitude, unless it strike the imagination or bind down the understanding, as we have observed above, with the shackles of vulgar notions. Hence we may well transfer Phocion's remark from morals to the intellect: "That men should immediately examine what error or fault they have committed, when the multitude concurs with, and applauds them."[42] This then is one of the most unfavorable signs. All the signs, therefore, of the truth and soundness of the received systems of philosophy and the sciences are unpropitious, whether taken from their origin, their fruits, their progress, the confessions of their authors, or from unanimity.

LXXVIII. We now come to the causes of errors,[43] and of such perseverance in them for ages. These are sufficiently numerous and powerful to remove all wonder, that what we now offer should have so long been concealed from, and have escaped the notice of mankind, and to render it more worthy of astonishment, that it should even now have entered any one's mind, or become the subject of his thoughts; and that it should have done so, we consider rather

the gift of fortune than of any extraordinary talent, and as the offspring of time rather than wit. But, in the first place, the number of ages is reduced to very narrow limits, on a proper consideration of the matter. For out of twenty-five[44] centuries, with which the memory and learning of man are conversant, scarcely six can be set apart and selected as fertile in science and favorable to its progress. For there are deserts and wastes in times as in countries, and we can only reckon up three revolutions and epochs of philosophy. 1. The Greek. 2. The Roman. 3. Our own, that is the philosophy of the western nations of Europe: and scarcely two centuries can with justice be assigned to each. The intermediate ages of the world were unfortunate both in the quantity and richness of the sciences produced. Nor need we mention the Arabs, or the scholastic philosophy, which, in those ages, ground down the sciences by their numerous treatises, more than they increased their weight. The first cause, then, of such insignificant progress in the sciences, is rightly referred to the small proportion of time which has been favorable thereto.

LXXIX. A second cause offers itself, which is certainly of the greatest importance; namely, that in those very ages in which men's wit and literature flourished considerably, or even moderately, but a small part of their industry was bestowed on natural philosophy, the great mother of the sciences. For every art and science torn from this root may, perhaps, be polished, and put into a serviceable shape, but can admit of little growth. It is well known, that after the Christian religion had been acknowledged, and arrived at maturity, by far the best wits were busied upon theology, where the highest rewards offered themselves, and every species of assistance was abundantly supplied, and the study of which was the principal occupation of the western European nations during the third epoch; the rather because literature flourished about the very time when controversies concerning religion first began to bud forth. 2. In the preceding ages, during the second epoch (that of the Romans), philosophical meditation and labor was chiefly occupied and wasted in moral philosophy (the theology of the heathens): besides, the greatest minds in these times applied themselves to civil affairs, on account of the magnitude of the Roman empire,

which required the labor of many. 3. The age during which natural philosophy appeared principally to flourish among the Greeks, was but a short period, since in the more ancient times the seven sages (with the exception of Thales), applied themselves to moral philosophy and politics, and at a later period, after Socrates had brought down philosophy from heaven to earth, moral philosophy became more prevalent, and diverted men's attention from natural. Nay, the very period during which physical inquiries flourished, was corrupted and rendered useless by contradictions, and the ambition of new opinions. Since, therefore, during these three epochs, natural philosophy has been materially neglected or impeded, it is not at all surprising that men should have made but little progress in it, seeing they were attending to an entirely different matter.

LXXX. Add to this that natural philosophy, especially of late, has seldom gained exclusive possession of an individual free from all other pursuits, even among those who have applied themselves to it, unless there may be an example or two of some monk studying in his cell, or some nobleman in his villa.[45] She has rather been made a passage and bridge to other pursuits.

Thus has this great mother of the sciences been degraded most unworthily to the situation of a handmaid, and made to wait upon medicine or mathematical operations, and to wash the immature minds of youth, and imbue them with a first dye, that they may afterward be more ready to receive and retain another. In the meantime, let no one expect any great progress in the sciences (especially their operative part), unless natural philosophy be applied to particular sciences, and particular sciences again referred back to natural philosophy. For want of this, astronomy, optics, music, many mechanical arts, medicine itself, and (what perhaps is more wonderful), moral and political philosophy, and the logical sciences have no depth, but only glide over the surface and variety of things; because these sciences, when they have been once partitioned out and established, are no longer nourished by natural philosophy, which would have imparted fresh vigor and growth to them from the sources and genuine contemplation of motion, rays, sounds, texture, and conformation of bodies, and

the affections and capacity of the understanding. But we can little wonder that the sciences grow not when separated from their roots.

LXXXI. There is another powerful and great cause of the little advancement of the sciences, which is this; it is impossible to advance properly in the course when the goal is not properly fixed. But the real and legitimate goal of the sciences is the endowment of human life with new inventions and riches. The great crowd of teachers know nothing of this, but consist of dictatorial hirelings; unless it so happen that some artisan of an acute genius, and ambitious of fame, gives up his time to a new discovery, which is generally attended with a loss of property. The majority, so far from proposing to themselves the augmentation of the mass of arts and sciences, make no other use of an inquiry into the mass already before them, than is afforded by the conversion of it to some use in their lectures, or to gain, or to the acquirement of a name, and the like. But if one out of the multitude be found, who courts science from real zeal, and on his own account, even he will be seen rather to follow contemplation, and the variety of theories, than a severe and strict investigation of truth. Again, if there even be an unusually strict investigator of truth, yet will he propose to himself, as the test of truth, the satisfaction of his mind and understanding, as to the causes of things long since known, and not such a test as to lead to some new earnest of effects, and a new light in axioms. If, therefore, no one have laid down the real end of science, we cannot wonder that there should be error in points subordinate to that end.

LXXXII. But, in like manner, as the end and goal of science is ill defined, so, even were the case otherwise, men have chosen an erroneous and impassable direction. For it is sufficient to astonish any reflecting mind, that nobody should have cared or wished to open and complete a way for the understanding, setting off from the senses, and regular, well-conducted experiment; but that everything has been abandoned either to the mists of tradition, the whirl and confusion of argument, or the waves and mazes of chance, and desultory, ill-combined experiment. Now, let any one but consider soberly and diligently the nature of the path men have been accustomed to pursue in the investigation and discovery

of any matter, and he will doubtless first observe the rude and inartificial manner of discovery most familiar to mankind: which is no other than this. When any one prepares himself for discovery, he first inquires and obtains a full account of all that has been said on the subject by others, then adds his own reflections, and stirs up and, as it were, invokes his own spirit, after much mental labor, to disclose its oracles. All which is a method without foundation, and merely turns on opinion.

Another, perhaps, calls in logic to assist him in discovery, which bears only a nominal relation to his purpose. For the discoveries of logic are not discoveries of principles and leading axioms, but only of what appears to accord with them.[46] And when men become curious and importunate, and give trouble, interrupting her about her proofs, and the discovery of principles or first axioms, she puts them off with her usual answer, referring them to faith, and ordering them to swear allegiance to each art in its own department.

There remains but mere experience, which, when it offers itself, is called chance; when it is sought after, experiment.[47] But this kind of experience is nothing but a loose fagot; and mere groping in the dark, as men at night try all means of discovering the right road, while it would be better and more prudent either to wait for day, or procure a light, and then proceed. On the contrary, the real order of experience begins by setting up a light, and then shows the road by it, commencing with a regulated and digested, not a misplaced and vague course of experiment, and thence deducing axioms, and from those axioms new experiments: for not even the Divine Word proceeded to operate on the general mass of things without due order.

Let men, therefore, cease to wonder if the whole course of science be not run, when all have wandered from the path; quitting it entirely, and deserting experience, or involving themselves in its mazes, and wandering about, while a regularly combined system would lead them in a sure track through its wilds to the open day of axioms.

LXXXIII. The evil, however, has been wonderfully increased by an opinion, or inveterate conceit, which is both vainglorious and prejudicial, namely, that the

dignity of the human mind is lowered by long and frequent intercourse with experiments and particulars, which are the objects of sense, and confined to matter; especially since such matters generally require labor in investigation, are mean subjects for meditation, harsh in discourse, unproductive in practice, infinite in number, and delicate in their subtilty. Hence we have seen the true path not only deserted, but intercepted and blocked up, experience being rejected with disgust, and not merely neglected or improperly applied.

LXXXIV. Again, the reverence for antiquity,[48] and the authority of men who have been esteemed great in philosophy, and general unanimity, have retarded men from advancing in science, and almost enchanted them. As to unanimity, we have spoken of it above.

The opinion which men cherish of antiquity is altogether idle, and scarcely accords with the term. For the old age and increasing years of the world should in reality be considered as antiquity, and this is rather the character of our own times than of the less advanced age of the world in those of the ancients; for the latter, with respect to ourselves, are ancient and elder, with respect to the world modern and younger. And as we expect a greater knowledge of human affairs, and more mature judgment from an old man than from a youth, on account of his experience, and the variety and number of things he has seen, heard, and meditated upon, so we have reason to expect much greater things of our own age (if it knew but its strength and would essay and exert it) than from antiquity, since the world has grown older, and its stock has been increased and accumulated with an infinite number of experiments and observations.

We must also take into our consideration that many objects in nature fit to throw light upon philosophy have been exposed to our view, and discovered by means of long voyages and travels, in which our times have abounded. It would, indeed, be dishonorable to mankind, if the regions of the material globe, the earth, the sea, and stars, should be so prodigiously developed and illustrated in our age, and yet the boundaries of the intellectual globe should be confined to the narrow discoveries of the ancients.

With regard to authority, it is the greatest weakness to attribute infinite credit to particular authors, and to refuse his own prerogative to time, the author of all authors, and, therefore, of all authority. For truth is rightly named the daughter of time, not of authority. It is not wonderful, therefore, if the bonds of antiquity, authority, and unanimity, have so enchained the power of man, that he is unable (as if bewitched) to become familiar with things themselves.

LXXXV. Nor is it only the admiration of antiquity, authority, and unanimity, that has forced man's industry to rest satisfied with present discoveries, but, also, the admiration of the effects already placed within his power. For whoever passes in review the variety of subjects, and the beautiful apparatus collected and introduced by the mechanical arts for the service of mankind, will certainly be rather inclined to admire our wealth than to perceive our poverty: not considering that the observations of man and operations of nature (which are the souls and first movers of that variety) are few, and not of deep research; the rest must be attributed merely to man's patience, and the delicate and well-regulated motion of the hand or of instruments. To take an instance, the manufacture of clocks is delicate and accurate, and appears to imitate the heavenly bodies in its wheels, and the pulse of animals in its regular oscillation, yet it only depends upon one or two axioms of nature.

Again, if one consider the refinement of the liberal arts, or even that exhibited in the preparation of natural bodies in mechanical arts and the like, as the discovery of the heavenly motions in astronomy, of harmony in music, of the letters of the alphabet[49] (still unadopted by the Chinese) in grammar; or, again, in mechanical operations, the productions of Bacchus and Ceres, that is, the preparation of wine and beer, the making of bread, or even the luxuries of the table, distillation, and the like; if one reflect also, and consider for how long a period of ages (for all the above, except distillation, are ancient) these things have been brought to their present state of perfection, and (as we instanced in clocks) to how few observations and axioms of nature they may be referred, and how easily, and as it were, by obvious chance or contemplation, they might be discovered, one would soon cease to admire and rather pity the human lot on

account of its vast want and dearth of things and discoveries for so many ages. Yet even the discoveries we have mentioned were more ancient than philosophy and the intellectual arts; so that (to say the truth) when contemplation and doctrinal science began, the discovery of useful works ceased.

But if any one turn from the manufactories to libraries, and be inclined to admire the immense variety of books offered to our view, let him but examine and diligently inspect the matter and contents of these books, and his astonishment will certainly change its object: for when he finds no end of repetitions, and how much men do and speak the same thing over again, he will pass from admiration of this variety to astonishment at the poverty and scarcity of matter, which has hitherto possessed and filled men's minds.

But if any one should condescend to consider such sciences as are deemed rather curious than sound, and take a full view of the operations of the alchemists or magii, he will perhaps hesitate whether he ought rather to laugh or to weep. For the alchemist cherishes eternal hope, and when his labors succeed not, accuses his own mistakes, deeming, in his self-accusation, that he has not properly understood the words of art or of his authors; upon which he listens to tradition and vague whispers, or imagines there is some slight unsteadiness in the minute details of his practice, and then has recourse to an endless repetition of experiments: and in the meantime, when, in his casual experiments, he falls upon something in appearance new, or of some degree of utility, he consoles himself with such an earnest, and ostentatiously publishes them, keeping up his hope of the final result. Nor can it be denied that the alchemists have made several discoveries, and presented mankind with useful inventions. But we may well apply to them the fable of the old man, who bequeathed to his sons some gold buried in his garden, pretending not to know the exact spot, whereupon they worked diligently in digging the vineyard, and though they found no gold, the vintage was rendered more abundant by their labor.

The followers of natural magic, who explain everything by sympathy and antipathy, have assigned false powers and marvellous operations to things by

gratuitous and idle conjectures: and if they have ever produced any effects, they are rather wonderful and novel than of any real benefit or utility.

In superstitious magic (if we say anything at all about it) we must chiefly observe, that there are only some peculiar and definite objects with which the curious and superstitious arts have, in every nation and age, and even under every religion, been able to exercise and amuse themselves. Let us, therefore, pass them over. In the meantime we cannot wonder that the false notion of plenty should have occasioned want.

LXXXVI. The admiration of mankind with regard to the arts and sciences, which is of itself sufficiently simple and almost puerile, has been increased by the craft and artifices of those who have treated the sciences, and delivered them down to posterity. For they propose and produce them to our view so fashioned, and as it were masked, as to make them pass for perfect and complete. For if you consider their method and divisions, they appear to embrace and comprise everything which can relate to the subject. And although this frame be badly filled up and resemble an empty bladder, yet it presents to the vulgar understanding the form and appearance of a perfect science.

The first and most ancient investigators of truth were wont, on the contrary, with more honesty and success, to throw all the knowledge they wished to gather from contemplation, and to lay up for use, into aphorisms, or short scattered sentences unconnected by any method, and without pretending or professing to comprehend any entire art. But according to the present system, we cannot wonder that men seek nothing beyond that which is handed down to them as perfect, and already extended to its full complement.

LXXXVII. The ancient theories have received additional support and credit from the absurdity and levity of those who have promoted the new, especially in the active and practical part of natural philosophy. For there have been many silly and fantastical fellows who, from credulity or imposture, have loaded mankind with promises, announcing and boasting of the prolongation of life, the retarding of old age, the alleviation of pains, the remedying of natural defects, the deception of the senses, the restraint and excitement of the passions, the

illumination and exaltation of the intellectual faculties, the transmutation of substances, the unlimited intensity and multiplication of motion, the impressions and changes of the air, the bringing into our power the management of celestial influences, the divination of future events, the representation of distant objects, the revelation of hidden objects, and the like. One would not be very wrong in observing with regard to such pretenders, that there is as much difference in philosophy, between their absurdity and real science, as there is in history between the exploits of Cæsar or Alexander, and those of Amadis de Gaul and Arthur of Britain. For those illustrious generals are found to have actually performed greater exploits than such fictitious heroes are even pretended to have accomplished, by the means, however, of real action, and not by any fabulous and portentous power. Yet it is not right to suffer our belief in true history to be diminished, because it is sometimes injured and violated by fables. In the meantime we cannot wonder that great prejudice has been excited against any new propositions (especially when coupled with any mention of effects to be produced), by the conduct of impostors who have made a similar attempt; for their extreme absurdity, and the disgust occasioned by it, has even to this day overpowered every spirited attempt of the kind.

LXXXVIII. Want of energy, and the littleness and futility of the tasks that human industry has undertaken, have produced much greater injury to the sciences: and yet (to make it still worse) that very want of energy manifests itself in conjunction with arrogance and disdain.

For, in the first place, one excuse, now from its repetition become familiar, is to be observed in every art, namely, that its promoters convert the weakness of the art itself into a calumny upon nature: and whatever it in their hands fails to effect, they pronounce to be physically impossible. But how can the art ever be condemned while it acts as judge in its own cause? Even the present system of philosophy cherishes in its bosom certain positions or dogmas, which (it will be found on diligent inquiry) are calculated to produce a full conviction that no difficult, commanding, and powerful operation upon nature ought to be anticipated through the means of art; we instanced[50] above the alleged different

quality of heat in the sun and fire, and composition and mixture. Upon an accurate observation the whole tendency of such positions is wilfully to circumscribe man's power, and to produce a despair of the means of invention and contrivance, which would not only confound the promises of hope, but cut the very springs and sinews of industry, and throw aside even the chances of experience. The only object of such philosophers is to acquire the reputation of perfection for their own art, and they are anxious to obtain the most silly and abandoned renown, by causing a belief that whatever has not yet been invented and understood can never be so hereafter. But if any one attempt to give himself up to things, and to discover something new; yet he will only propose and destine for his object the investigation and discovery of some one invention, and nothing more; as the nature of the magnet, the tides, the heavenly system, and the like, which appear enveloped in some degree of mystery, and have hitherto been treated with but little success. Now it is the greatest proof of want of skill, to investigate the nature of any object in itself alone; for that same nature, which seems concealed and hidden in some instances, is manifest and almost palpable in others, and excites wonder in the former, while it hardly attracts attention in the latter.[51] Thus the nature of consistency is scarcely observed in wood or stone, but passed over by the term solid without any further inquiry about the repulsion of separation or the solution of continuity. But in water-bubbles the same circumstance appears matter of delicate and ingenious research, for they form themselves into thin pellicles, curiously shaped into hemispheres, so as for an instant to avoid the solution of continuity.

In general those very things which are considered as secret are manifest and common in other objects, but will never be clearly seen if the experiments and contemplation of man be directed to themselves only. Yet it commonly happens, that if, in the mechanical arts, any one bring old discoveries to a finer polish, or more elegant height of ornament, or unite and compound them, or apply them more readily to practice, or exhibit them on a less heavy and voluminous scale, and the like, they will pass off as new.

We cannot, therefore, wonder that no magnificent discoveries, worthy of mankind, have been brought to light, while men are satisfied and delighted with such scanty and puerile tasks, nay, even think that they have pursued or attained some great object in their accomplishment.

LXXXIX. Nor should we neglect to observe that natural philosophy has, in every age, met with a troublesome and difficult opponent: I mean superstition, and a blind and immoderate zeal for religion. For we see that, among the Greeks, those who first disclosed the natural causes of thunder and storms to the yet untrained ears of man were condemned as guilty of impiety toward the gods.[52] Nor did some of the old fathers of Christianity treat those much better who showed by the most positive proofs (such as no one now disputes) that the earth is spherical, and thence asserted that there were antipodes.[53]

Even in the present state of things the condition of discussions on natural philosophy is rendered more difficult and dangerous by the summaries and methods of divines, who, after reducing divinity into such order as they could, and brought it into a scientific form, have proceeded to mingle an undue proportion of the contentious and thorny philosophy of Aristotle with the substance of religion.[54]

The fictions of those who have not feared to deduce and confirm the truth of the Christian religion by the principles and authority of philosophers, tend to the same end, though in a different manner.[55] They celebrate the union of faith and the senses as though it were legitimate, with great pomp and solemnity, and gratify men's pleasing minds with a variety, but in the meantime confound most improperly things divine and human. Moreover, in these mixtures of divinity and philosophy the received doctrines of the latter are alone included, and any novelty, even though it be an improvement, scarcely escapes banishment and extermination.

In short, you may find all access to any species of philosophy, however pure, intercepted by the ignorance of divines. Some in their simplicity are apprehensive that a too deep inquiry into nature may penetrate beyond the proper bounds of decorum, transferring and absurdly applying what is said of sacred

mysteries in Holy Writ against those who pry into divine secrets, to the mysteries of nature, which are not forbidden by any prohibition. Others with more cunning imagine and consider, that if secondary causes be unknown, everything may more easily be referred to the Divine hand and wand, a matter, as they think, of the greatest consequence to religion, but which can only really mean that God wishes to be gratified by means of falsehood. Others fear, from past example, lest motion and change in philosophy should terminate in an attack upon religion. Lastly, there are others who appear anxious lest there should be something discovered in the investigation of nature to overthrow, or at least shake, religion, particularly among the unlearned. The last two apprehensions appear to resemble animal instinct, as if men were diffident, in the bottom of their minds and secret meditations, of the strength of religion and the empire of faith over the senses, and therefore feared that some danger awaited them from an inquiry into nature. But any one who properly considers the subject will find natural philosophy to be, after the Word of God, the surest remedy against superstition, and the most approved support of faith. She is, therefore, rightly bestowed upon religion as a most faithful attendant, for the one exhibits the will and the other the power of God. Nor was he wrong who observed, “Ye err, not knowing the Scriptures and the power of God,” thus uniting in one bond the revelation of his will and the contemplation of his power. In the meanwhile, it is not wonderful that the progress of natural philosophy has been restrained, since religion, which has so much influence on men’s minds, has been led and hurried to oppose her through the ignorance of some and the imprudent zeal of others.

XC. Again, in the habits and regulations of schools, universities, and the like assemblies, destined for the abode of learned men and the improvement of learning, everything is found to be opposed to the progress of the sciences; for the lectures and exercises are so ordered, that anything out of the common track can scarcely enter the thoughts and contemplations of the mind. If, however, one or two have perhaps dared to use their liberty, they can only impose the labor on themselves, without deriving any advantage from the association of others; and

if they put up with this, they will find their industry and spirit of no slight disadvantage to them in making their fortune; for the pursuits of men in such situations are, as it were, chained down to the writings of particular authors, and if any one dare to dissent from them he is immediately attacked as a turbulent and revolutionary spirit. Yet how great is the difference between civil matters and the arts, for there is not the same danger from new activity and new light. In civil matters even a change for the better is suspected on account of the commotion it occasions, for civil government is supported by authority, unanimity, fame, and public opinion, and not by demonstration. In the arts and sciences, on the contrary, every department should resound, as in mines, with new works and advances. And this is the rational, though not the actual view of the case, for that administration and government of science we have spoken of is wont too rigorously to repress its growth.

XCI. And even should the odium I have alluded to be avoided, yet it is sufficient to repress the increase of science that such attempts and industry pass unrewarded; for the cultivation of science and its reward belong not to the same individual. The advancement of science is the work of a powerful genius, the prize and reward belong to the vulgar or to princes, who (with a few exceptions) are scarcely moderately well informed. Nay, such progress is not only deprived of the rewards and beneficence of individuals, but even of popular praise; for it is above the reach of the generality, and easily overwhelmed and extinguished by the winds of common opinions. It is not wonderful, therefore, that little success has attended that which has been little honored.

XCII. But by far the greatest obstacle to the advancement of the sciences, and the undertaking of any new attempt or department, is to be found in men's despair and the idea of impossibility; for men of a prudent and exact turn of thought are altogether diffident in matters of this nature, considering the obscurity of nature, the shortness of life, the deception of the senses, and weakness of the judgment. They think, therefore, that in the revolutions of ages and of the world there are certain floods and ebbs of the sciences, and that they

grow and flourish at one time, and wither and fall off at another, that when they have attained a certain degree and condition they can proceed no further.

If, therefore, any one believe or promise greater things, they impute it to an uncurbed and immature mind, and imagine that such efforts begin pleasantly, then become laborious, and end in confusion. And since such thoughts easily enter the minds of men of dignity and excellent judgment, we must really take heed lest we should be captivated by our affection for an excellent and most beautiful object, and relax or diminish the severity of our judgment; and we must diligently examine what gleam of hope shines upon us, and in what direction it manifests itself, so that, banishing her lighter dreams, we may discuss and weigh whatever appears of more sound importance. We must consult the prudence of ordinary life, too, which is diffident upon principle, and in all human matters augurs the worst. Let us, then, speak of hope, especially as we are not vain promisers, nor are willing to enforce or insnare men's judgment, but would rather lead them willingly forward. And although we shall employ the most cogent means of enforcing hope when we bring them to particulars, and especially those which are digested and arranged in our Tables of Invention (the subject partly of the second, but principally of the fourth part of the Instauration), which are, indeed, rather the very object of our hopes than hope itself; yet to proceed more leniently we must treat of the preparation of men's minds, of which the manifestation of hope forms no slight part; for without it all that we have said tends rather to produce a gloom than to encourage activity or quicken the industry of experiment, by causing them to have a worse and more contemptuous opinion of things as they are than they now entertain, and to perceive and feel more thoroughly their unfortunate condition. We must, therefore, disclose and prefix our reasons for not thinking the hope of success improbable, as Columbus, before his wonderful voyage over the Atlantic, gave the reasons of his conviction that new lands and continents might be discovered besides those already known; and these reasons, though at first rejected, were yet proved by subsequent experience, and were the causes and beginnings of the greatest events.

XCIII. Let us begin from God, and show that our pursuit from its exceeding goodness clearly proceeds from him, the author of good and father of light. Now, in all divine works the smallest beginnings lead assuredly to some result, and the remark in spiritual matters that "the kingdom of God cometh without observation," is also found to be true in every great work of Divine Providence, so that everything glides quietly on without confusion or noise, and the matter is achieved before men either think or perceive that it is commenced. Nor should we neglect to mention the prophecy of Daniel, of the last days of the world, "Many shall run to and fro, and knowledge shall be increased,"[56] thus plainly hinting and suggesting that fate (which is Providence) would cause the complete circuit of the globe (now accomplished, or at least going forward by means of so many distant voyages), and the increase of learning to happen at the same epoch.

XCIV. We will next give a most potent reason for hope deduced from the errors of the past, and the ways still unattempted; for well was an ill-governed state thus reproved, "That which is worst with regard to the past should appear most consolatory for the future; for if you had done all that your duty commanded, and your affairs proceeded no better, you could not even hope for their improvement; but since their present unhappy situation is not owing to the force of circumstances, but to your own errors, you have reason to hope that by banishing or correcting the latter you can produce a great change for the better in the former." So if men had, during the many years that have elapsed, adhered to the right way of discovering and cultivating the sciences without being able to advance, it would be assuredly bold and presumptuous to imagine it possible to improve; but if they have mistaken the way and wasted their labor on improper objects, it follows that the difficulty does not arise from things themselves, which are not in our power, but from the human understanding, its practice and application, which is susceptible of remedy and correction. Our best plan, therefore, is to expose these errors; for in proportion as they impeded the past, so do they afford reason to hope for the future. And although we have touched upon them above, yet we think it right to give a brief, bare, and simple enumeration of them in this place.

XCV. Those who have treated of the sciences have been either empirics or dogmatical.[57] The former like ants only heap up and use their store, the latter like spiders spin out their own webs. The bee, a mean between both, extracts matter from the flowers of the garden and the field, but works and fashions it by its own efforts. The true labor of philosophy resembles hers, for it neither relies entirely or principally on the powers of the mind, nor yet lays up in the memory the matter afforded by the experiments of natural history and mechanics in its raw state, but changes and works it in the understanding. We have good reason, therefore, to derive hope from a closer and purer alliance of these faculties (the experimental and rational) than has yet been attempted.

XCVI. Natural philosophy is not yet to be found unadulterated, but is impure and corrupted — by logic in the school of Aristotle, by natural theology in that of Plato,[58] by mathematics in the second school of Plato (that of Proclus and others)[59] which ought rather to terminate natural philosophy than to generate or create it. We may, therefore, hope for better results from pure and unmixed natural philosophy.

XCVII. No one has yet been found possessed of sufficient firmness and severity to resolve upon and undertake the task of entirely abolishing common theories and notions, and applying the mind afresh, when thus cleared and levelled, to particular researches; hence our human reasoning is a mere farrago and crude mass made up of a great deal of credulity and accident, and the puerile notions it originally contracted.

But if a man of mature age, unprejudiced senses, and clear mind, would betake himself anew to experience and particulars, we might hope much more from such a one; in which respect we promise ourselves the fortune of Alexander the Great, and let none accuse us of vanity till they have heard the tale, which is intended to check vanity.

For Æschines spoke thus of Alexander and his exploits: “We live not the life of mortals, but are born at such a period that posterity will relate and declare our prodigies”; as if he considered the exploits of Alexander to be miraculous.

But in succeeding ages[60] Livy took a better view of the fact, and has made some such observation as this upon Alexander: “That he did no more than dare to despise insignificance.” So in our opinion posterity will judge of us, that we have achieved no great matters, but only set less account upon what is considered important; for the meantime (as we have before observed) our only hope is in the regeneration of the sciences, by regularly raising them on the foundation of experience and building them anew, which I think none can venture to affirm to have been already done or even thought of.

XCVIII. The foundations of experience (our sole resource) have hitherto failed completely or have been very weak; nor has a store and collection of particular facts, capable of informing the mind or in any way satisfactory, been either sought after or amassed. On the contrary, learned, but idle and indolent, men have received some mere reports of experience, traditions as it were of dreams, as establishing or confirming their philosophy, and have not hesitated to allow them the weight of legitimate evidence. So that a system has been pursued in philosophy with regard to experience resembling that of a kingdom or state which would direct its councils and affairs according to the gossip of city and street politicians, instead of the letters and reports of ambassadors and messengers worthy of credit. Nothing is rightly inquired into, or verified, noted, weighed, or measured, in natural history; indefinite and vague observation produces fallacious and uncertain information. If this appear strange, or our complaint somewhat too unjust (because Aristotle himself, so distinguished a man and supported by the wealth of so great a king, has completed an accurate history of animals, to which others with greater diligence but less noise have made considerable additions, and others again have composed copious histories and notices of plants, metals, and fossils), it will arise from a want of sufficiently attending to and comprehending our present observations; for a natural history compiled on its own account, and one collected for the mind’s information as a foundation for philosophy, are two different things. They differ in several respects, but principally in this — the former contains only the varieties of natural species without the experiments of mechanical arts; for as in ordinary life

every person's disposition, and the concealed feelings of the mind and passions are most drawn out when they are disturbed — so the secrets of nature betray themselves more readily when tormented by art than when left to their own course. We must begin, therefore, to entertain hopes of natural philosophy then only, when we have a better compilation of natural history, its real basis and support.

XCIX. Again, even in the abundance of mechanical experiments, there is a very great scarcity of those which best inform and assist the understanding. For the mechanic, little solicitous about the investigation of truth, neither directs his attention, nor applies his hand to anything that is not of service to his business. But our hope of further progress in the sciences will then only be well founded, when numerous experiments shall be received and collected into natural history, which, though of no use in themselves, assist materially in the discovery of causes and axioms; which experiments we have termed enlightening, to distinguish them from those which are profitable. They possess this wonderful property and nature, that they never deceive or fail you; for being used only to discover the natural cause of some object, whatever be the result, they equally satisfy your aim by deciding the question.

C. We must not only search for, and procure a greater number of experiments, but also introduce a completely different method, order, and progress of continuing and promoting experience. For vague and arbitrary experience is (as we have observed), mere groping in the dark, and rather astonishes than instructs. But when experience shall proceed regularly and uninterruptedly by a determined rule, we may entertain better hopes of the sciences.

CI. But after having collected and prepared an abundance and store of natural history, and of the experience required for the operations of the understanding or philosophy, still the understanding is as incapable of acting on such materials of itself, with the aid of memory alone, as any person would be of retaining and achieving, by memory, the computation of an almanac. Yet meditation has hitherto done more for discovery than writing, and no experiments have been

committed to paper. We cannot, however, approve of any mode of discovery without writing, and when that comes into more general use, we may have further hopes.

CII. Besides this, there is such a multitude and host, as it were, of particular objects, and lying so widely dispersed, as to distract and confuse the understanding; and we can, therefore, hope for no advantage from its skirmishing, and quick movements and incursions, unless we put its forces in due order and array, by means of proper and well arranged, and, as it were, living tables of discovery of these matters, which are the subject of investigation, and the mind then apply itself to the ready prepared and digested aid which such tables afford.

CIII. When we have thus properly and regularly placed before the eyes a collection of particulars, we must not immediately proceed to the investigation and discovery of new particulars or effects, or, at least, if we do so, must not rest satisfied therewith. For, though we do not deny that by transferring the experiments from one art to another (when all the experiments of each have been collected and arranged, and have been acquired by the knowledge, and subjected to the judgment of a single individual), many new experiments may be discovered tending to benefit society and mankind, by what we term literate experience; yet comparatively insignificant results are to be expected thence, while the more important are to be derived from the new light of axioms, deduced by certain method and rule from the above particulars, and pointing out and defining new particulars in their turn. Our road is not a long plain, but rises and falls, ascending to axioms, and descending to effects.

CIV. Nor can we suffer the understanding to jump and fly from particulars to remote and most general axioms (such as are termed the principles of arts and things), and thus prove and make out their intermediate axioms according to the supposed unshaken truth of the former. This, however, has always been done to the present time from the natural bent of the understanding, educated too, and accustomed to this very method, by the syllogistic mode of demonstration. But

we can then only augur well for the sciences, when the assent shall proceed by a true scale and successive steps, without interruption or breach, from particulars to the lesser axioms, thence to the intermediate (rising one above the other), and lastly, to the most general. For the lowest axioms differ but little from bare experiment;[61] the highest and most general (as they are esteemed at present), are notional, abstract, and of no real weight. The intermediate are true, solid, full of life, and upon them depend the business and fortune of mankind; beyond these are the really general, but not abstract, axioms, which are truly limited by the intermediate.

We must not then add wings, but rather lead and ballast to the understanding, to prevent its jumping or flying, which has not yet been done; but whenever this takes place, we may entertain greater hopes of the sciences.

CV. In forming axioms, we must invent a different form of induction from that hitherto in use; not only for the proof and discovery of principles (as they are called), but also of minor, intermediate, and, in short, every kind of axioms. The induction which proceeds by simple enumeration is puerile, leads to uncertain conclusions, and is exposed to danger from one contradictory instance, deciding generally from too small a number of facts, and those only the most obvious. But a really useful induction for the discovery and demonstration of the arts and sciences, should separate nature by proper rejections and exclusions, and then conclude for the affirmative, after collecting a sufficient number of negatives. Now this has not been done, nor even attempted, except perhaps by Plato, who certainly uses this form of induction in some measure, to sift definitions and ideas. But much of what has never yet entered the thoughts of man must necessarily be employed, in order to exhibit a good and legitimate mode of induction or demonstration, so as even to render it essential for us to bestow more pains upon it than have hitherto been bestowed on syllogisms. The assistance of induction is to serve us not only in the discovery of axioms, but also in defining our notions. Much indeed is to be hoped from such an induction as has been described.

CVI. In forming our axioms from induction, we must examine and try whether the axiom we derive be only fitted and calculated for the particular instances from which it is deduced, or whether it be more extensive and general. If it be the latter, we must observe, whether it confirm its own extent and generality by giving surety, as it were, in pointing out new particulars, so that we may neither stop at actual discoveries, nor with a careless grasp catch at shadows and abstract forms, instead of substances of a determinate nature: and as soon as we act thus, well authorized hope may with reason be said to beam upon us.

CVII. Here, too, we may again repeat what we have said above, concerning the extending of natural philosophy and reducing particular sciences to that one, so as to prevent any schism or dismembering of the sciences; without which we cannot hope to advance.

CVIII. Such are the observations we would make in order to remove despair and excite hope, by bidding farewell to the errors of past ages, or by their correction. Let us examine whether there be other grounds for hope. And, first, if many useful discoveries have occurred to mankind by chance or opportunity, without investigation or attention on their part, it must necessarily be acknowledged that much more may be brought to light by investigation and attention, if it be regular and orderly, not hasty and interrupted. For although it may now and then happen that one falls by chance upon something that had before escaped considerable efforts and laborious inquiries, yet undoubtedly the reverse is generally the case. We may, therefore, hope for further, better, and more frequent results from man’s reason, industry, method, and application, than from chance and mere animal instinct, and the like, which have hitherto been the sources of invention.

CIX. We may also derive some reason for hope from the circumstance of several actual inventions being of such a nature, that scarcely any one could have formed a conjecture about them previously to their discovery, but would rather have ridiculed them as impossible. For men are wont to guess about new subjects from those they are already acquainted with, and the hasty and vitiated fancies they have thence formed: than which there cannot be a more fallacious

mode of reasoning, because much of that which is derived from the sources of things does not flow in their usual channel.

If, for instance, before the discovery of cannon, one had described its effects in the following manner: There is a new invention by which walls and the greatest bulwarks can be shaken and overthrown from a considerable distance; men would have begun to contrive various means of multiplying the force of projectiles and machines by means of weights and wheels, and other modes of battering and projecting. But it is improbable that any imagination or fancy would have hit upon a fiery blast, expanding and developing itself so suddenly and violently, because none would have seen an instance at all resembling it, except perhaps in earthquakes or thunder, which they would have immediately rejected as the great operations of nature, not to be imitated by man.

So, if before the discovery of silk thread, any one had observed, that a species of thread had been discovered, fit for dresses and furniture, far surpassing the thread of worsted or flax in fineness, and at the same time in tenacity, beauty, and softness; men would have begun to imagine something about Chinese plants, or the fine hair of some animals, or the feathers or down of birds, but certainly would never have had an idea of its being spun by a small worm, in so copious a manner, and renewed annually. But if any one had ventured to suggest the silkworm, he would have been laughed at as if dreaming of some new manufacture from spiders.

So again, if before the discovery of the compass, any one had said, that an instrument had been invented, by which the quarters and points of the heavens could be exactly taken and distinguished, men would have entered into disquisitions on the refinement of astronomical instruments, and the like, from the excitement of their imaginations; but the thought of anything being discovered, which, not being a celestial body, but a mere mineral or metallic substance, should yet in its motion agree with that of such bodies, would have appeared absolutely incredible. Yet were these facts, and the like (unknown for so many ages) not discovered at last either by philosophy or reasoning, but by chance and opportunity; and (as we have observed), they are of a nature most

heterogeneous, and remote from what was hitherto known, so that no previous knowledge could lead to them.

We may, therefore, well hope[62] that many excellent and useful matters are yet treasured up in the bosom of nature, bearing no relation or analogy to our actual discoveries, but out of the common track of our imagination, and still undiscovered, and which will doubtless be brought to light in the course and lapse of years, as the others have been before them; but in the way we now point out, they may rapidly and at once be both represented and anticipated.

CX. There are, moreover, some inventions which render it probable that men may pass and hurry over the most noble discoveries which lie immediately before them. For however the discovery of gunpowder, silk, the compass, sugar, paper, or the like, may appear to depend on peculiar properties of things and nature, printing at least involves no contrivance which is not clear and almost obvious. But from want of observing that although the arrangement of the types of letters required more trouble than writing with the hand, yet these types once arranged serve for innumerable impressions, while manuscript only affords one copy; and again, from want of observing that ink might be thickened so as to stain without running (which was necessary, seeing the letters face upward, and the impression is made from above), this most beautiful invention (which assists so materially the propagation of learning) remained unknown for so many ages.

The human mind is often so awkward and ill-regulated in the career of invention that it is at first diffident, and then despises itself. For it appears at first incredible that any such discovery should be made, and when it has been made, it appears incredible that it should so long have escaped men's research. All which affords good reason for the hope that a vast mass of inventions yet remains, which may be deduced not only from the investigation of new modes of operation, but also from transferring, comparing, and applying these already known, by the method of what we have termed literate experience.

CXI. Nor should we omit another ground of hope. Let men only consider (if they will) their infinite expenditure of talent, time, and fortune, in matters and studies of far inferior importance and value; a small portion of which applied to

sound and solid learning would be sufficient to overcome every difficulty. And we have thought right to add this observation, because we candidly own that such a collection of natural and experimental history as we have traced in our own mind, and as is really necessary, is a great and as it were royal work, requiring much labor and expense.

CXII. In the meantime let no one be alarmed at the multitude of particulars, but rather inclined to hope on that very account. For the particular phenomena of the arts and nature are in reality but as a handful, when compared with the fictions of the imagination removed and separated from the evidence of facts. The termination of our method is clear, and I had almost said near at hand; the other admits of no termination, but only of infinite confusion. For men have hitherto dwelt but little, or rather only slightly touched upon experience, while they have wasted much time on theories and the fictions of the imagination. If we had but any one who could actually answer our interrogations of nature, the invention of all causes and sciences would be the labor of but a few years.

CXIII. We think some ground of hope is afforded by our own example, which is not mentioned for the sake of boasting, but as a useful remark. Let those who distrust their own powers observe myself, one who have among my contemporaries been the most engaged in public business, who am not very strong in health (which causes a great loss of time), and am the first explorer of this course, following the guidance of none, nor even communicating my thoughts to a single individual; yet having once firmly entered in the right way, and submitting the powers of my mind to things, I have somewhat advanced (as I make bold to think) the matter I now treat of. Then let others consider what may be hoped from men who enjoy abundant leisure, from united labors, and the succession of ages, after these suggestions on our part, especially in a course which is not confined, like theories, to individuals, but admits of the best distribution and union of labor and effect, particularly in collecting experiments. For men will then only begin to know their own power, when each performs a separate part, instead of undertaking in crowds the same work.

CXIV. Lastly, though a much more faint and uncertain breeze of hope were to spring up from our new continent, yet we consider it necessary to make the experiment, if we would not show a dastard spirit. For the risk attending want of success is not to be compared with that of neglecting the attempt; the former is attended with the loss of a little human labor, the latter with that of an immense benefit. For these and other reasons it appears to us that there is abundant ground to hope, and to induce not only those who are sanguine to make experiment, but even those who are cautious and sober to give their assent.

CXV. Such are the grounds for banishing despair, hitherto one of the most powerful causes of the delay and restraint to which the sciences have been subjected; in treating of which we have at the same time discussed the signs and causes of the errors, idleness, and ignorance that have prevailed; seeing especially that the more refined causes, which are not open to popular judgment and observation, may be referred to our remarks on the idols of the human mind.

Here, too, we should close the demolishing branch of our Instauration, which is comprised in three confutations: 1, the confutation of natural human reason left to itself; 2, the confutation of demonstration; 3, the confutation of theories, or received systems of philosophy and doctrines. Our confutation has followed such a course as was open to it, namely, the exposing of the signs of error, and the producing evidence of the causes of it: for we could adopt no other, differing as we do both in first principles and demonstrations from others.

It is time for us therefore to come to the art itself, and the rule for the interpretation of nature: there is, however, still something which must not be passed over. For the intent of this first book of aphorisms being to prepare the mind for understanding, as well as admitting, what follows, we must now, after having cleansed, polished, and levelled its surface, place it in a good position, and as it were a benevolent aspect toward our propositions; seeing that prejudice in new matters may be produced not only by the strength of preconceived notions, but also by a false anticipation or expectation of the matter proposed. We shall therefore endeavor to induce good and correct opinions of what we

offer, although this be only necessary for the moment, and as it were laid out at interest, until the matter itself be well understood.

CXVI. First, then, we must desire men not to suppose that we are ambitious of founding any philosophical sect, like the ancient Greeks, or some moderns, as Telesius, Patricius, and Severinus.[63] For neither is this our intention, nor do we think that peculiar abstract opinions on nature and the principles of things are of much importance to men's fortunes, since it were easy to revive many ancient theories, and to introduce many new ones; as, for instance, many hypotheses with regard to the heavens can be formed, differing in themselves, and yet sufficiently according with the phenomena.

We bestow not our labor on such theoretical and, at the same time, useless topics. On the contrary, our determination is that of trying, whether we can lay a firmer foundation, and extend to a greater distance the boundaries of human power and dignity. And although here and there, upon some particular points, we hold (in our own opinion) more true and certain, and I might even say, more advantageous tenets than those in general repute (which we have collected in the fifth part of our Instauration), yet we offer no universal or complete theory. The time does not yet appear to us to be arrived, and we entertain no hope of our life being prolonged to the completion of the sixth part of the Instauration (which is destined for philosophy discovered by the interpretation of nature), but are content if we proceed quietly and usefully in our intermediate pursuit, scattering, in the meantime, the seeds of less adulterated truth for posterity, and, at least, commence the great work.

CXVII. And, as we pretend not to found a sect, so do we neither offer nor promise particular effects; which may occasion some to object to us, that since we so often speak of effects, and consider everything in its relation to that end, we ought also to give some earnest of producing them. Our course and method, however (as we have often said, and again repeat), is such as not to deduce effects from effects, nor experiments from experiments (as the empirics do), but in our capacity of legitimate interpreters of nature, to deduce causes and axioms

from effects and experiments; and new effects and experiments from those causes and axioms.

And although any one of moderate intelligence and ability will observe the indications and sketches of many noble effects in our tables of inventions (which form the fourth part of the Instauration), and also in the examples of particular instances cited in the second part, as well as in our observations on history (which is the subject of the third part); yet we candidly confess that our present natural history, whether compiled from books or our own inquiries, is not sufficiently copious and well ascertained to satisfy, or even assist, a proper interpretation.

If, therefore, there be any one who is more disposed and prepared for mechanical art, and ingenious in discovering effects, than in the mere management of experiment, we allow him to employ his industry in gathering many of the fruits of our history and tables in this way, and applying them to effects, receiving them as interest till he can obtain the principal. For our own part, having a greater object in view, we condemn all hasty and premature rest in such pursuits as we would Atalanta's apple (to use a common allusion of ours); for we are not childishly ambitious of golden fruit, but use all our efforts to make the course of art outstrip nature, and we hasten not to reap moss or the green blade, but wait for a ripe harvest.

CXVIII. There will be some, without doubt, who, on a perusal of our history and tables of invention, will meet with some uncertainty, or perhaps fallacy, in the experiments themselves, and will thence perhaps imagine that our discoveries are built on false foundations and principles. There is, however, really nothing in this, since it must needs happen in beginnings.[64] For it is the same as if in writing or printing one or two letters were wrongly turned or misplaced, which is no great inconvenience to the reader, who can easily by his own eye correct the error; let men in the same way conclude, that many experiments in natural history may be erroneously believed and admitted, which are easily expunged and rejected afterward, by the discovery of causes and axioms. It is, however, true, that if these errors in natural history and

experiments become great, frequent, and continued, they cannot be corrected and amended by any dexterity of wit or art. If then, even in our natural history, well examined and compiled with such diligence, strictness, and (I might say) reverential scruples, there be now and then something false and erroneous in the details, what must we say of the common natural history, which is so negligent and careless when compared with ours? or of systems of philosophy and the sciences, based on such loose soil (or rather quicksand)? Let none then be alarmed by such observations.

CXIX. Again, our history and experiments will contain much that is light and common, mean and illiberal, too refined and merely speculative, and, as it were, of no use, and this perhaps may divert and alienate the attention of mankind.

With regard to what is common; let men reflect, that they have hitherto been used to do nothing but refer and adapt the causes of things of rare occurrence to those of things which more frequently happen, without any investigation of the causes of the latter, taking them for granted and admitted.

Hence, they do not inquire into the causes of gravity, the rotation of the heavenly bodies, heat, cold, light, hardness, softness, rarity, density, liquidity, solidity, animation, inanimation, similitude, difference, organic formation, but taking them to be self-evident, manifest, and admitted, they dispute and decide upon other matters of less frequent and familiar occurrence.

But we (who know that no judgment can be formed of that which is rare or remarkable, and much less anything new brought to light, without a previous regular examination and discovery of the causes of that which is common, and the causes again of those causes) are necessarily compelled to admit the most common objects into our history. Besides, we have observed that nothing has been so injurious to philosophy as this circumstance, namely, that familiar and frequent objects do not arrest and detain men’s contemplation, but are carelessly admitted, and their causes never inquired after; so that information on unknown subjects is not more often wanted than attention to those which are known.

CXX. With regard to the meanness, or even the filthiness of particulars, for which (as Pliny observes), an apology is requisite, such subjects are no less

worthy of admission into natural history than the most magnificent and costly; nor do they at all pollute natural history, for the sun enters alike the palace and the privy, and is not thereby polluted. We neither dedicate nor raise a capitol or pyramid to the pride of man, but rear a holy temple in his mind, on the model of the universe, which model therefore we imitate. For that which is deserving of existence is deserving of knowledge, the image of existence. Now the mean and splendid alike exist. Nay, as the finest odors are sometimes produced from putrid matter (such as musk and civet), so does valuable light and information emanate from mean and sordid instances. But we have already said too much, for such fastidious feelings are childish and effeminate.

CXXI. The next point requires a more accurate consideration, namely, that many parts of our history will appear to the vulgar, or even any mind accustomed to the present state of things, fantastically and uselessly refined. Hence, we have in regard to this matter said from the first, and must again repeat, that we look for experiments that shall afford light rather than profit, imitating the divine creation, which, as we have often observed, only produced light on the first day, and assigned that whole day to its creation, without adding any material work.

If any one, then, imagine such matters to be of no use, he might equally suppose light to be of no use, because it is neither solid nor material. For, in fact, the knowledge of simple natures, when sufficiently investigated and defined, resembles light, which, though of no great use in itself, affords access to the general mysteries of effects, and with a peculiar power comprehends and draws with it whole bands and troops of effects, and the sources of the most valuable axioms. So also the elements of letters have of themselves separately no meaning, and are of no use, yet are they, as it were, the original matter in the composition and preparation of speech. The seeds of substances, whose effect is powerful, are of no use except in their growth, and the scattered rays of light itself avail not unless collected.

But if speculative subtilties give offence, what must we say of the scholastic philosophers who indulged in them to such excess? And those subtilties were

wasted on words, or, at least, common notions (which is the same thing), not on things or nature, and alike unproductive of benefit in their origin and their consequences: in no way resembling ours, which are at present useless, but in their consequences of infinite benefit. Let men be assured that all subtile disputes and discursive efforts of the mind are late and preposterous, when they are introduced subsequently to the discovery of axioms, and that their true, or, at any rate, chief opportunity is, when experiment is to be weighed and axioms to be derived from it. They otherwise catch and grasp at nature, but never seize or detain her: and we may well apply to nature that which has been said of opportunity or fortune, that she wears a lock in front, but is bald behind.

In short, we may reply decisively to those who despise any part of natural history as being vulgar, mean, or subtile, and useless in its origin, in the words of a poor woman to a haughty prince,[65] who had rejected her petition as unworthy, and beneath the dignity of his majesty: “Then cease to reign”; for it is quite certain that the empire of nature can neither be obtained nor administered by one who refuses to pay attention to such matters as being poor and too minute.

CXXII. Again, it may be objected to us as being singular and harsh, that we should with one stroke and assault, as it were, banish all authorities and sciences, and that too by our own efforts, without requiring the assistance and support of any of the ancients.

Now we are aware, that had we been ready to act otherwise than sincerely, it was not difficult to refer our present method to remote ages, prior to those of the Greeks (since the sciences in all probability flourished more in their natural state, though silently, than when they were paraded with the fifes and trumpets of the Greeks); or even (in parts, at least) to some of the Greeks themselves, and to derive authority and honor from thence; as men of no family labor to raise and form nobility for themselves in some ancient line, by the help of genealogies. Trusting, however, to the evidence of facts, we reject every kind of fiction and imposture; and think it of no more consequence to our subject, whether future discoveries were known to the ancients, and set or rose according to the vicissitudes of events and lapse of ages, than it would be of importance to

mankind to know whether the new world be the island of Atlantis,[66] and known to the ancients, or be now discovered for the first time.

With regard to the universal censure we have bestowed, it is quite clear, to any one who properly considers the matter, that it is both more probable and more modest than any partial one could have been. For if the errors had not been rooted in the primary notions, some well conducted discoveries must have corrected others that were deficient. But since the errors were fundamental, and of such a nature, that men may be said rather to have neglected or passed over things, than to have formed a wrong or false judgment of them, it is little to be wondered at, that they did not obtain what they never aimed at, nor arrive at a goal which they had not determined, nor perform a course which they had neither entered upon nor adhered to.

With regard to our presumption, we allow that if we were to assume a power of drawing a more perfect straight line or circle than any one else, by superior steadiness of hand or acuteness of eye, it would lead to a comparison of talent; but if one merely assert that he can draw a more perfect line or circle with a ruler or compasses, than another can by his unassisted hand or eye, he surely cannot be said to boast of much. Now this applies not only to our first original attempt, but also to those who shall hereafter apply themselves to the pursuit. For our method of discovering the sciences merely levels men's wits, and leaves but little to their superiority, since it achieves everything by the most certain rules and demonstrations. Whence (as we have often observed), our attempt is to be attributed to fortune rather than talent, and is the offspring of time rather than of wit. For a certain sort of chance has no less effect upon our thoughts than on our acts and deeds.

CXXIII. We may, therefore, apply to ourselves the joke of him who said, that water and wine drinkers could not think alike,[67] especially as it hits the matter so well. For others, both ancients and moderns, have in the sciences drank a crude liquor like water, either flowing of itself from the understanding, or drawn up by logic as the wheel draws up the bucket. But we drink and pledge others with a liquor made of many well-ripened grapes, collected and plucked from particular

branches, squeezed in the press, and at last clarified and fermented in a vessel. It is not, therefore, wonderful that we should not agree with others.

CXXIV. Another objection will without doubt be made, namely, that we have not ourselves established a correct, or the best goal or aim of the sciences (the very defect we blame in others). For they will say that the contemplation of truth is more dignified and exalted than any utility or extent of effects; but that our dwelling so long and anxiously on experience and matter, and the fluctuating state of particulars, fastens the mind to earth, or rather casts it down into an abyss of confusion and disturbance, and separates and removes it from a much more divine state, the quiet and tranquillity of abstract wisdom. We willingly assent to their reasoning, and are most anxious to effect the very point they hint at and require. For we are founding a real model of the world in the understanding, such as it is found to be, not such as man's reason has distorted. Now this cannot be done without dissecting and anatomizing the world most diligently; but we declare it necessary to destroy completely the vain, little and, as it were, apish imitations of the world, which have been formed in various systems of philosophy by men's fancies. Let men learn (as we have said above) the difference that exists between the idols of the human mind and the ideas of the divine mind. The former are mere arbitrary abstractions; the latter the true marks of the Creator on his creatures, as they are imprinted on, and defined in matter, by true and exquisite touches. Truth, therefore, and utility, are here perfectly identical, and the effects are of more value as pledges of truth than from the benefit they confer on men.

CXXV. Others may object that we are only doing that which has already been done, and that the ancients followed the same course as ourselves. They may imagine, therefore, that, after all this stir and exertion, we shall at last arrive at some of those systems that prevailed among the ancients: for that they, too, when commencing their meditations, laid up a great store of instances and particulars, and digested them under topics and titles in their commonplace books, and so worked out their systems and arts, and then decided upon what they discovered, and related now and then some examples to confirm and throw

light upon their doctrine; but thought it superfluous and troublesome to publish their notes, minutes, and commonplaces, and therefore followed the example of builders who remove the scaffolding and ladders when the building is finished. Nor can we indeed believe the case to have been otherwise. But to any one, not entirely forgetful of our previous observations, it will be easy to answer this objection or rather scruple; for we allow that the ancients had a particular form of investigation and discovery, and their writings show it. But it was of such a nature, that they immediately flew from a few instances and particulars (after adding some common notions, and a few generally received opinions most in vogue) to the most general conclusions or the principles of the sciences, and then by their intermediate propositions deduced their inferior conclusions, and tried them by the test of the immovable and settled truth of the first, and so constructed their art. Lastly, if some new particulars and instances were brought forward, which contradicted their dogmas, they either with great subtilty reduced them to one system, by distinctions or explanations of their own rules, or got rid of them clumsily as exceptions, laboring most pertinaciously in the meantime to accommodate the causes of such as were not contradictory to their own principles. Their natural history and their experience were both far from being what they ought to have been, and their flying off to generalities ruined everything.

CXXVI. Another objection will be made against us, that we prohibit decisions and the laying down of certain principles, till we arrive regularly at generalities by the intermediate steps, and thus keep the judgment in suspense and lead to uncertainty. But our object is not uncertainty but fitting certainty, for we derogate not from the senses but assist them, and despise not the understanding but direct it. It is better to know what is necessary, and not to imagine we are fully in possession of it, than to imagine that we are fully in possession of it, and yet in reality to know nothing which we ought.

CXXVII. Again, some may raise this question rather than objection, whether we talk of perfecting natural philosophy alone according to our method, or the other sciences also, such as logic, ethics, politics. We certainly intend to

comprehend them all. And as common logic, which regulates matters by syllogisms, is applied not only to natural, but also to every other science, so our inductive method likewise comprehends them all.[68] For we form a history and tables of invention for anger, fear, shame, and the like, and also for examples in civil life, and the mental operations of memory, composition, division, judgment, and the rest, as well as for heat and cold, light, vegetation, and the like. But since our method of interpretation, after preparing and arranging a history, does not content itself with examining the operations and disquisitions of the mind like common logic, but also inspects the nature of things, we so regulate the mind that it may be enabled to apply itself in every respect correctly to that nature. On that account we deliver numerous and various precepts in our doctrine of interpretation, so that they may apply in some measure to the method of discovering the quality and condition of the subject matter of investigation.

CXXVIII. Let none even doubt whether we are anxious to destroy and demolish the philosophy, arts, and sciences, which are now in use. On the contrary, we readily cherish their practice, cultivation, and honor; for we by no means interfere to prevent the prevalent system from encouraging discussion, adorning discourses, or being employed serviceably in the chair of the professor or the practice of common life, and being taken, in short, by general consent as current coin. Nay, we plainly declare, that the system we offer will not be very suitable for such purposes, not being easily adapted to vulgar apprehensions, except by effects and works. To show our sincerity in professing our regard and friendly disposition toward the received sciences, we can refer to the evidence of our published writings (especially our books on the Advancement of Learning). We will not, therefore, endeavor to evince it any further by words; but content ourselves with steadily and professedly premising, that no great progress can be made by the present methods in the theory or contemplation of science, and that they cannot be made to produce any very abundant effects.

CXXIX. It remains for us to say a few words on the excellence of our proposed end. If we had done so before, we might have appeared merely to express our wishes, but now that we have excited hope and removed prejudices,

it will perhaps have greater weight. Had we performed and completely accomplished the whole, without frequently calling in others to assist in our labors, we should then have refrained from saying any more, lest we should be thought to extol our own deserts. Since, however, the industry of others must be quickened, and their courage roused and inflamed, it is right to recall some points to their memory.

First, then, the introduction of great inventions appears one of the most distinguished of human actions, and the ancients so considered it; for they assigned divine honors to the authors of inventions, but only heroic honors to those who displayed civil merit (such as the founders of cities and empire legislators, the deliverers of their country from lasting misfortunes, the quellers of tyrants, and the like). And if any one rightly compare them, he will find the judgment of antiquity to be correct; for the benefits derived from inventions may extend to mankind in general, but civil benefits to particular spots alone; the latter, moreover, last but for a time, the former forever. Civil reformation seldom is carried on without violence and confusion, while inventions are a blessing and a benefit without injuring or afflicting any.

Inventions are also, as it were, new creations and imitations of divine works, as was expressed by the poet:[69]

"Primum frugiferos fœtus mortalibus ægris Dididerant quondam præstanti nomine Athenæ Et *recreaverunt* vitam legesque rogarunt."

And it is worthy of remark in Solomon, that while he flourished in the possession of his empire, in wealth, in the magnificence of his works, in his court, his household, his fleet, the splendor of his name, and the most unbounded admiration of mankind, he still placed his glory in none of these, but declared[70] that it is the glory of God to conceal a thing, but the glory of a king to search it out.

Again, let any one but consider the immense difference between men's lives in the most polished countries of Europe, and in any wild and barbarous region of the new Indies, he will think it so great, that man may be said to be a god unto

man, not only on account of mutual aid and benefits, but from their comparative states — the result of the arts, and not of the soil or climate.

Again, we should notice the force, effect, and consequences of inventions, which are nowhere more conspicuous than in those three which were unknown to the ancients; namely, printing, gunpowder, and the compass. For these three have changed the appearance and state of the whole world: first in literature, then in warfare, and lastly in navigation; and innumerable changes have been thence derived, so that no empire, sect, or star, appears to have exercised a greater power and influence on human affairs than these mechanical discoveries.

It will, perhaps, be as well to distinguish three species and degrees of ambition. First, that of men who are anxious to enlarge their own power in their country, which is a vulgar and degenerate kind; next, that of men who strive to enlarge the power and empire of their country over mankind, which is more dignified but not less covetous; but if one were to endeavor to renew and enlarge the power and empire of mankind in general over the universe, such ambition (if it may be so termed) is both more sound and more noble than the other two. Now the empire of man over things is founded on the arts and sciences alone, for nature is only to be commanded by obeying her.

Besides this, if the benefit of any particular invention has had such an effect as to induce men to consider him greater than a man, who has thus obliged the whole race, how much more exalted will that discovery be, which leads to the easy discovery of everything else! Yet (to speak the truth) in the same manner as we are very thankful for light which enables us to enter on our way, to practice arts, to read, to distinguish each other, and yet sight is more excellent and beautiful than the various uses of light; so is the contemplation of things as they are, free from superstition or imposture, error or confusion, much more dignified in itself than all the advantage to be derived from discoveries.

Lastly, let none be alarmed at the objection of the arts and sciences becoming depraved to malevolent or luxurious purposes and the like, for the same can be said of every worldly good; talent, courage, strength, beauty, riches, light itself, and the rest. Only let mankind regain their rights over nature, assigned to them

by the gift of God, and obtain that power, whose exercise will be governed by right reason and true religion.

CXXX. But it is time for us to lay down the art of interpreting nature, to which we attribute no absolute necessity (as if nothing could be done without it) nor perfection, although we think that our precepts are most useful and correct. For we are of opinion, that if men had at their command a proper history of nature and experience, and would apply themselves steadily to it, and could bind themselves to two things: 1, to lay aside received opinions and notions; 2, to restrain themselves, till the proper season, from generalization, they might, by the proper and genuine exertion of their minds, fall into our way of interpretation without the aid of any art. For interpretation is the true and natural act of the mind, when all obstacles are removed: certainly, however, everything will be more ready and better fixed by our precepts.

Yet do we not affirm that no addition can be made to them; on the contrary, considering the mind in its connection with things, and not merely relatively to its own powers, we ought to be persuaded that the art of invention can be made to grow with the inventions themselves.

ENDNOTES.

[2] Bacon uses the term in its ancient sense, and means one who, knowing the occult properties of bodies, is able to startle the ignorant by drawing out of them wonderful and unforeseen changes. See the 85th aphorism of this book, and the 5th cap. book iii. of the De Augmentis Scientiarum, where he speaks more clearly. — *Ed.*

[3] By this term axiomata, Bacon here speaks of general principles, or universal laws. In the 19th aphorism he employs the term to express any proposition collected from facts by induction, and thus fitted to become the starting-point of deductive reasoning. In the last and more rigorous sense of the term, Bacon held they arose from experience. See Whewell's "Philosophy of the Inductive Sciences," vol. i. p. 74; and Mill's "Logic," vol. i. p. 311; and the June "Quarterly," 1841, for the modern phase of the discussion. — *Ed.*

[4] Bacon here attributes to the Aristotelian logic the erroneous consequences which sprung out of its abuse. The demonstrative forms it exhibits, whether verbally or mathematically expressed, are necessary to the support, verification, and extension of induction, and when the propositions they embrace are founded on an accurate and close observation of facts, the conclusions to which they lead, even in moral science, may be

regarded as certain as the facts wrested out of nature by direct experiment. In physics such forms are absolutely required to generalize the results of experience, and to connect intermediate axioms with laws still more general, as is sufficiently attested by the fact, that no science since Bacon's day has ceased to be experimental by the mere method of induction, and that all become exact only so far as they rise above experience, and connect their isolated phenomena with general laws by the principles of deductive reasoning. So far, then, are these forms from being useless, that they are absolutely essential to the advancement of the sciences, and in no case can be looked on as detrimental, except when obtruded in the place of direct experiment, or employed as a means of deducing conclusions about nature from imaginary hypotheses and abstract conceptions. This had been unfortunately the practice of the Greeks. From the rapid development geometry received in their hands, they imagined the same method would lead to results equally brilliant in natural science, and snatching up some abstract principle, which they carefully removed from the test of experiment, imagined they could reason out from it all the laws and external appearances of the universe. The scholastics were impelled along the same path, not only by precedent, but by profession. Theology was the only science which received from them a consistent development, and the *à priori* grounds on which it rested prevented them from employing any other method in the pursuit of natural phenomena. Thus, forms of demonstration, in themselves accurate, and of momentous value in their proper sphere, became confounded with fable, and led men into the idea they were exploring truth when they were only accurately deducing error from error. One principle ever so slightly deflected, like a false quantity in an equation, could be sufficient to infect the whole series of conclusions of which it was the base; and though the philosopher might subsequently deduce a thousand consecutive inferences with the utmost accuracy or precision, he would only succeed in drawing out very methodically nine hundred and ninety-nine errors. — *Ed.*

[5] It would appear from this and the two preceding aphorisms, that Bacon fell into the error of denying the utility of the syllogism in the very part of inductive science where it is essentially required. Logic, like mathematics, is purely a formal process, and must, as the scaffolding to the building, be employed to arrange facts in the structure of a science, and not to form any portion of its groundwork, or to supply the materials of which the system is to be composed. The word syllogism, like most other psychological terms, has no fixed or original signification, but is sometimes employed, as it was by the Greeks, to denote general reasoning, and at others to point out the formal method of deducing a particular inference from two or more general propositions. Bacon does not confine the term within the boundaries of express definition, but leaves us to infer that he took it in the latter sense, from his custom of associating the term with the wranglings of the schools. The scholastics, it is true, abused the deductive syllogism, by employing it in its naked, skeleton-like form, and confounding it with the whole breadth of logical theory; but their errors are not to be visited on Aristotle, who never dreamed of playing with formal syllogisms, and, least of all, mistook the descending for the ascending series of inference. In our mind we are of accord with the Stagyrite, who propounds, as far as we can interpret him, two modes of investigating truth — the one by which we ascend from particular and singular facts to general laws and axioms, and the other by which we descend from universal propositions to the individual cases which they virtually include. Logic, therefore, must equally vindicate the formal purity of the synthetic illation by which it ascends to the whole, as the

analytic process by which it descends to the parts. The deductive and inductive syllogism are of equal significance in building up any body of truth, and whoever restricts logic to either process, mistakes one-half of its province for the whole; and if he acts upon his error, will paralyze his methods, and strike the noblest part of science with sterility. — *Ed.*

[6] The Latin is, *ad ea quæ revera sunt naturæ notiora*. This expression, *naturæ notiora*, *naturæ notior*, is so frequently employed by Bacon, that we may conclude it to point to some distinguishing feature in the Baconian physics. It properly refers to the most evident principles and laws of nature, and springs from that system which regards the material universe as endowed with intelligence, and acting according to rules either fashioned or clearly understood by itself. — *Ed.*

[7] This Borgia was Alexander VI., and the expedition alluded to that in which Charles VIII. overran the Italian peninsula in five months. Bacon uses the same illustration in concluding his survey of natural philosophy, in the second book of the "De Augmentis." — *Ed.*

[8] *Ratio eorum qui acatalepsiam tenuerunt.* Bacon alludes to the members of the later academy, who held the ἀκατάληψια, or the impossibility of comprehending anything. His translator, however, makes him refer to the sceptics, who neither dogmatized about the known or the unknown, but simply held, that as all knowledge was relative, πρὸς πάντα τι, man could never arrive at absolute truth, and therefore could not with certainty affirm or deny anything. — *Ed.*

[9] It is argued by Hallam, with some appearance of truth, that idols is not the correct translation of εἴδωλα, from which the original idola is manifestly derived; but that Bacon used it in the literal sense attached to it by the Greeks, as a species of illusion, or false appearance, and not as a species of divinity before which the mind bows down. If Hallam be right, Bacon is saved from the odium of an analogy which his foreign commentators are not far wrong in denouncing as barbarous; but this service is rendered at the expense of the men who have attached an opposite meaning to the word, among whom are Brown, Playfair and Dugald Stewart. — *Ed.*

[10] We cannot see how these idols have less to do with sophistical paralogisms than with natural philosophy. The process of scientific induction involves only the first elements of reasoning, and presents such a clear and tangible surface, as to allow no lurking-place for prejudice; while questions of politics and morals, to which the deductive method, or common logic, as Bacon calls it, is peculiarly applicable, are ever liable to be swayed or perverted by the prejudices he enumerates. After mathematics, physical science is the least amenable to the illusions of feeling; each portion having been already tested by experiment and observation, is fitted into its place in the system, with all the rigor of the geometrical method; affection or prejudice cannot, as in matters of taste, history or religion, select fragmentary pieces, and form a system of their own. The whole must be admitted, or the structure of authoritative reason razed to the ground. It is needless to say that the idols enumerated present only another interpretation of the substance of logical fallacies. — *Ed.*

[11] The propensity to this illusion may be viewed in the spirit of system, or hasty generalization, which is still one of the chief obstacles in the path of modern science. — *Ed.*

[12] Though Kepler had, when Bacon wrote this, already demonstrated his three great laws concerning the elliptical path of the planets, neither Bacon nor Descartes seems to have known or assented to his discoveries. Our author deemed the startling astronomical announcements of his time to be mere theoretic solutions of the phenomena of the heavens, not so perfect as those advanced by antiquity, but still deserving a praise for the ingenuity displayed in their contrivance. Bacon believed a hundred such systems might exist, and though true in their explanation of phenomena, yet might all more or less differ, according to the preconceived notions which their framers brought to the survey of the heavens. He even thought he might put in his claim to the notice of posterity for his astronomical ingenuity, and, as Ptolemy had labored by means of epicycles and eccentrics, and Kepler with ellipses, to explain the laws of planetary motion, Bacon thought the mystery would unfold itself quite as philosophically through spiral labyrinths and serpentine lines. What the details of his system were, we are left to conjecture, and that from a very meagre but naïve account of one of his inventions which he has left in his Miscellany MSS. — *Ed.*

[13] *Hinc elementum ignis cum orbe suo introductum est.* Bacon saw in fire the mere result of a certain combination of action, and was consequently led to deny its elementary character. The ancient physicists attributed an orbit to each of the four elements, into which they resolved the universe, and supposed their spheres to involve each other. The orbit of the earth was in the centre, that of fire at the circumference. For Bacon's inquisition into the nature of heat, and its complete failure, see the commencement of the second book of the Novum Organum. — *Ed.*

[14] Robert Fludd is the theorist alluded to, who had supposed the gravity of the earth to be ten times heavier than water, that of water ten times heavier than air, and that of air ten times heavier than fire. — *Ed.*

[15] Diagoras. The same allusion occurs in the second part of the Advancement of Learning, where Bacon treats of the idols of the mind.

[16] A scholastic term, to signify the two eternities of past and future duration, that stretch out on both sides of the narrow isthmus (time) occupied by man. It must be remembered that Bacon lived before the doctrine of limits gave rise to the higher calculus, and therefore could have no conception of different denominations of infinities: on the other hand he would have thought the man insane who should have talked to him about lines infinitely great, inclosing angles infinitely little; that a right line, which is a right line so long as it is finite, by changing infinitely little its direction, becomes an infinite curve, and that a curve may become infinitely less than another curve; that there are infinite squares and infinite cubes, and infinites of infinites, all greater than one another, and the last but one of which is nothing in comparison with the last. Yet half a century sufficed from Bacon's time, to make this nomenclature, which would have appeared to him the excess of frenzy, not only reasonable but necessary, to grasp the higher demonstrations of physical science. — *Ed.*

[17] Spinoza, in his letter to Oldenberg (Op. Posth. p. 398), considers this aphorism based on a wrong conception of the origin of error, and, believing it to be fundamental, was led to reject Bacon's method altogether. Spinoza refused to acknowledge in man any such thing as a will, and resolved all his volitions into particular acts, which he considered to be as fatally determined by a chain of physical causes as any effects in nature. — *Ed.*

[18] *Operatio spirituum in corporibus tangibilibus.* Bacon distinguished with the schools the gross and tangible parts of bodies, from such as were volatile and intangible. These, in conformity with the scholastic language, he terms spirits, and frequently returns to their operations in the 2d book. — *Ed.*

[19] Democritus, of Abdera, a disciple of Leucippus, born B.C. 470, died 360; all his works are destroyed. He is said to be the author of the doctrine of atoms: he denied the immortality of the soul, and first taught that the milky way was occasioned by a confused light from a multitude of stars. He may be considered as the parent of experimental philosophy, in the prosecution of which he was so ardent as to declare that he would prefer the discovery of one of the causes of natural phenomena, to the possession of the diadem of Persia. Democritus imposed on the blind credulity of his contemporaries, and, like Roger Bacon, astonished them by his inventions. — *Ed.*

[20] The Latin is *actus purus*, another scholastic expression to denote the action of the substance, which composes the essence of the body apart from its accidental qualities. For an exposition of the various kinds of motions he contemplates, the reader may refer to the 48th aphorism of the 2d book. — *Ed.*

[21] The scholastics after Aristotle distinguished in a subject three modes of beings: viz., the power or faculty, the act, and the habitude, or in other words that which is able to exist, what exists actually, and what continues to exist. Bacon means that is necessary to fix our attention not on that which can or ought to be, but on that which actually is; not on the right, but on the fact. — *Ed.*

[22] The inference to be drawn from this is to suspect that kind of evidence which is most consonant to our inclinations, and not to admit any notion as real except we can base it firmly upon that kind of demonstration which is peculiar to the subject, not to our impression. Sometimes the mode of proof may be consonant to our inclinations, and to the subject at the same time, as in the case of Pythagoras, when he applied his beloved numbers to the solution of astronomical phenomena; or in that of Descartes, when he reasoned geometrically concerning the nature of the soul. Such examples cannot be censured with justice, inasmuch as the methods pursued were adapted to the end of the inquiry. The remark in the text can only apply to those philosophers who attempt to build up a moral or theological system by the instruments of induction alone, or who rush, with the geometrical axiom, and the *à priori* syllogism, to the investigation of nature. The means in such cases are totally inadequate to the object in view. — *Ed.*

[23] Gilbert lived toward the close of the sixteenth century, and was court physician to both Elizabeth and James. In his work alluded to in the text he continually asserts the advantages of the experimental over the *à*

priori method in physical inquiry, and succeeded when his censor failed in giving a practical example of the utility of his precepts. His “De Magnete” contains all the fundamental parts of the science, and these so perfectly treated, that we have nothing to add to them at the present day.

Gilbert adopted the Copernican system, and even spoke of the contrary theory as utterly absurd, grounding his argument on the vast velocities which such a supposition requires us to ascribe to the heavenly bodies. — *Ed.*

[24] The Latin text adds “without end”; but Bacon is scarcely right in supposing that the descent from complex ideas and propositions to those of simple nature, involve the analyst in a series of continuous and interminable definitions. For in the gradual and analytical scale, there is a bar beyond which we cannot go, as there is a summit bounded by the limited variations of our conceptions. Logical definitions, to fulfil their conditions, or indeed to be of any avail, must be given in simpler terms than the object which is sought to be defined; now this, in the case of primordial notions and objects of sense, is impossible; therefore we are obliged to rest satisfied with the mere names of our perceptions. — *Ed.*

[25] The ancients supposed the planets to describe an exact circle round the south. As observations increased and facts were disclosed, which were irreconcilable with this supposition, the earth was removed from the centre to some other point in the circle, and the planets were supposed to revolve in a smaller circle (epicycle) round an imaginary point, which in its turn described a circle of which the earth was the centre. In proportion as observation elicited fresh facts, contradictory to these representations, other epicycles and eccentrics were added, involving additional confusion. Though Kepler had swept away all these complicated theories in the preceding century, by the demonstration of his three laws, which established the elliptical course of the planets, Bacon regarded him and Copernicus in the same light as Ptolemy and Xenophanes. — *Ed.*

[26] Empedocles, of Agrigentum, flourished 444 B.C. He was the disciple of Telanges the Pythagorean, and warmly adopted the doctrine of transmigration. He resolved the universe into the four ordinary elements, the principles of whose composition were life and happiness, or concord and amity, but whose decomposition brought forth death and evil, or discord and hatred. Heraclitus held matter to be indifferent to any peculiar form, but as it became rarer or more dense, it took the appearance of fire, air, earth and water. Fire, however, he believed to be the elementary principle out of which the others were evolved. This was also the belief of Lucretius. See book i. 783, *etc.*

[27] It is thus the Vulcanists and Neptunians have framed their opposite theories in geology. Phrenology is a modern instance of hasty generalization. — *Ed.*

[28] In Scripture everything which concerns the passing interests of the body is called dead; the only living knowledge having regard to the eternal interest of the soul. — *Ed.*

[29] In mechanics and the general sciences, causes compound their effects, or in other words, it is generally possible to deduce *à priori* the consequence of introducing complex agencies into any experiment, by allowing for the effect of each of the simple causes which enter into their composition. In chemistry and physiology a contrary law holds; the causes which they embody generally uniting to form distinct substances, and to introduce unforeseen laws and combinations. The deductive method here is consequently inapplicable, and we are forced back upon experiment.

Bacon in the text is hardly consistent with himself, as he admits in the second book the doctrine, to which modern discovery points, of the reciprocal transmutation of the elements. What seemed poetic fiction in the theories of Pythagoras and Seneca, assumes the appearance of scientific fact in the hands of Baron Caynard. — *Ed.*

[30] Galileo had recently adopted the notion that nature abhorred a vacuum for an axiomatic principle, and it was not till Torricelli, his disciple, had given practical proof of the utility of Bacon's method, by the discovery of the barometer (1643) that this error, as also that expressed below, and believed by Bacon, concerning the homœopathic tendencies of bodies, was destroyed. — *Ed.*

[31] *Donec ad materiam potentialem et informem ventum fuerit.* Nearly all the ancient philosophers admitted the existence of a certain primitive and shapeless matter as the substratum of things which the creative power had reduced to fixed proportions, and resolved into specific substances. The expression potential matter refers to that substance forming the basis of the Peripatetic system, which virtually contained all the forms that it was in the power of the efficient cause to draw out of it. — *Ed.*

[32] An allusion to the humanity of the *Sultans*, who, in their earlier histories are represented as signalizing their accession to the throne by the destruction of their family, to remove the danger of rivalry and the terrors of civil war. — *Ed.*

[33] The text is "in odium veterum sophistarum, Protagoræ, Hippiæ, et reliquorum." Those were called sophists, who, *ostentationis aut questus causa philosophabantur*. (Acad. Prior. ii. 72.) They had corrupted and degraded philosophy before Socrates. Protagoras of Abdera (Ἄβδηρα), the most celebrated, taught that man is the measure of all things, by which he meant not only that all which can be known is known only as it related to our faculties, but also that apart from our faculties nothing can be known. The sceptics equally held that knowledge was probable only as it related to our faculties, but they stopped there, and did not, like the sophist, dogmatize about the unknown. The works of Protagoras were condemned for their impiety, and publicly burned by the ædiles of Athens, who appear to have discharged the office of common hangmen to the literary blasphemers of their day. — *Ed.*

[34] Bacon is hardly correct in implying that the *enumerationem per simplicem* was the only light in which the ancients looked upon induction, as they appear to have regarded it as only one, and that the least important, of its species. Aristotle expressly considers induction in a perfect or dialectic sense, and in an

imperfect or rhetorical sense. Thus if a genus (*G*), contains four species (*A*, *B*, *C*, *D*), the syllogism would lead us to infer, that what is true of *G*, is true of any one of the four. But perfect induction would reason, that what we can prove of *A*, *B*, *C*, *D*, separately, we may properly state as true of *G*, the whole genus. This is evidently a formal argument as demonstrative as the syllogism. In necessary matters, however, legitimate induction may claim a wider province, and infer of the whole genus what is only apparent in a part of the species. Such are those inductive inferences which concern the laws of nature, the immutability of forms, by which Bacon strove to erect his new system of philosophy. The Stagyrite, however, looked upon *enumerationem per simplicem*, without any regard to the nature of the matter, or to the completeness of the species, with as much reprehensive caution as Bacon, and guarded his readers against it as the source of innumerable errors. — *Ed.*

[35] See Ax. lxi. toward the end. This subject extends to Ax. lxxviii.

[36] Gorgias of Leontium went to Athens in 424 B.C. He and Polus were disciples of Empedocles, whom we have already noticed (Aphorism 63), where he sustained the three famous propositions, that nothing exists, that nothing can be known, and that it is out of the power of man to transmit or communicate intelligence. He is reckoned one of the earliest writers on the art of rhetoric, and for that reason, Plato called his elegant dialogue on that subject after his name.

[37] Chrysippus, a stoic philosopher of Soli in Cilicia, Campestris, born in 280, died in the 143d Olympiad, 208 B.C. He was equally distinguished for natural abilities and industry, seldom suffering a day to elapse without writing 500 lines. He wrote several hundred volumes, of which three hundred were on logical subjects; but in all, borrowed largely from others. He was very fond of the *sorites* in argument, which is hence called by Persius the heap of Chrysippus. He was called the Column of the Portico, a name given to the Stoical School from Zeno, its founder, who had given his lessons under the portico.

Carneades, born about 215, died in 130. He attached himself to Chrysippus, and sustained with *éclat* the scepticism of the academy. The Athenians sent him with Critolaus and Diogenes as ambassador to Rome, where he attracted the attention of his new auditory by the subtilty of his reasoning, and the fluency and vehemence of his language. Before Galba and Cato the Censor, he harangued with great variety of thought and copiousness of diction in praise of justice. The next day, to establish his doctrine of the uncertainty of human knowledge, he undertook to refute all his arguments. He maintained with the New Academy, that the senses, the imagination, and the understanding frequently deceive us, and therefore cannot be infallible judges of truth, but that from the impressions produced on the mind by means of the senses, we infer appearances of truth or probabilities. Nevertheless, with respect to the conduct of life, Carneades held that probable opinions are a sufficient guide.

Xenophanes, a Greek philosopher, of Colophon, born in 556, the founder of the Eleatic school, which owes its fame principally to Parmenides. Wild in his opinions about astronomy, he supposed that the stars were extinguished every morning, and rekindled at night; that eclipses were occasioned by the temporary

extinction of the sun, and that there were several suns for the convenience of the different climates of the earth. Yet this man held the chair of philosophy at Athens for seventy years.

Philolaus, a Pythagorean philosopher of Crotona, B.C. 374. He first supported the diurnal motion of the earth round its axis, and its annual motion round the sun. Cicero (Acad. iv. 39) has ascribed this opinion to the Syracusan philosopher Nicetas, and likewise to Plato. From this passage, it is most probable that Copernicus got the idea of the system he afterward established. Bacon, in the Advancement of Human Learning, charges Gilbert with restoring the doctrines of Philolaus, because he ventured to support the Copernican theory. — *Ed.*

[38] Bacon is equally conspicuous for the use and abuse of analogical illustrations. The levity, as Stuart Mill very properly observes, by which substances float on a stream, and the levity which is synonymous with worthlessness, have nothing beside the name in common; and to show how little value there is in the figure, we need only change the word into buoyancy, to turn the semblance of Bacon's argument against himself. — *Ed.*

[39] We have before observed, that the New Academy did not profess skepticism, but the ἀκατάληψια, or incomprehensibility of the absolute essences of things. Even modern physicists are not wanting, to assert with this school that the utmost knowledge we can obtain is relative, and necessarily short of absolute certainty. It is not without an appearance of truth that these philosophers maintain that our ideas and perceptions do not express the nature of the things which they represent, but only the effects of the peculiar organs by which they are conveyed to the understanding, so that were these organs changed, we should have different conceptions of their nature. That constitution of air which is dark to man is luminous to bats and owls.

[40] Owing to the universal prevalence of Aristotelism.

[41] It must be remembered, that when Bacon wrote, algebra was in its infancy, and the doctrine of units and infinitesimals undiscovered.

[42] Because the vulgar make up the overwhelming majority in such decisions, and generally allow their judgments to be swayed by passion or prejudice.

[43] See end of Axiom lxi. The subject extends to Axiom xc.

[44] If we adopt the statement of Herodotus, who places the Homeric era 400 years back from his time, Homer lived about 900 years before Christ. On adding this number to the sixteen centuries of the Christian era which had elapsed up to Bacon's time, we get the twenty-five centuries he mentions. The Homeric epoch is the furthest point in antiquity from which Bacon could reckon with any degree of certainty. Hesiod, if he were not contemporary, immediately preceded him.

The epoch of Greek philosophy may be included between Thales and Plato, that is, from the 35th to the 88th Olympiad; that of the Roman, between Terence and Pliny. The modern revolution, in which Bacon is one of the central figures, took its rise from the time of Dante and Petrarch, who lived at the commencement of the fourteenth century; and to which, on account of the invention of printing, and the universal spread of literature, which has rendered a second destruction of learning impossible, it is difficult to foresee any other end than the extinction of the race of man. — *Ed.*

[45] The allusion is evidently to Roger Bacon and Réné Descartes. — *Ed.*

[46] From the abuse of the scholastics, who mistook the *à priori* method, the deductive syllogism, for the entire province of logic. — *Ed.*

[47] See Aphorism xcv.

[48] The incongruity to which Bacon alludes appears to spring from confounding two things, which are not only distinct, but affect human knowledge in inverse proportion, viz., the experience which terminates with life, with that experience which one century transmits to another. — *Ed.*

[49] The Chinese characters resemble, in many respects, the hieroglyphics of the Egyptians, being adapted to represent ideas, not sounds.

[50] See Axiom 75.

[51] The methods by which Newton carried the rule and compass to the boundaries of creation is a sufficient comment on the sagacity of the text. The same cause which globulizes a bubble, has rounded the earth, and the same law which draws a stone to its surface, keeps the moon in her orbit. It was by calculating and ascertaining these principles upon substances entirely at his disposal that this great philosopher was enabled to give us a key to unlock the mysteries of the universe. — *Ed.*

[52] See the “Clouds” of Aristophanes, where Socrates is represented as chasing Jupiter out of the sky, by resolving thunderstorms into aërial concussions and whirlwinds. — *Ed.*

[53] Robespierre was the latest victim of this bigotry. In his younger days he attempted to introduce Franklin’s lightning conductor into France, but was persecuted by those whose lives he sought to protect, as one audaciously striving to avert the designs of Providence. — *Ed.*

[54] We can hardly agree with the text. The scholastics, in building up a system of divinity, certainly had recourse to the deductive syllogism, because the inductive was totally inapplicable, except as a verificatory process. With regard to the technical form in which they marshalled their arguments, which is what our

author aims at in his censure, they owed nothing at all to Aristotle, the conducting a dispute in naked syllogistic fashion having originated entirely with themselves. — *Ed.*

[55] Bacon cannot be supposed to allude to those divines who have attempted to show that the progress of physical science is confirmatory of revelation, but only to such as have built up a system of faith out of their own refinements on nature and revelation, as Patricius and Emanuel Swedenborg. — *Ed.*

[56] Daniel xii. 4.

[57] Bacon, in this Aphorism, appears to have entertained a fair idea of the use of the inductive and deductive methods in scientific inquiry, though his want of geometrical knowledge must have hindered him from accurately determining the precise functions of each, as it certainly led him in other parts of the Organon (V. Aph. 82), to undervalue the deductive, and, as he calls it, the dogmatic method, and to rely too much upon empiricism. — *Ed.*

[58] The reader may consult the note of the 23d Aphorism for the fault which Bacon censures, and, if he wish to pursue the subject further, may read Plato's Timæus, where that philosopher explains his system in detail. Bacon, however, is hardly consistent in one part of his censure, for he also talks about the spirit and appetites of inanimate substances, and that so frequently, as to preclude the supposition that he is employing metaphor. — *Ed.*

[59] Proclus flourished about the beginning of the fifth century, and was the successor of Plotinus, Porphyry and Iamblicus, who, in the two preceding centuries, had revived the doctrines of Plato, and assailed the Christian religion. The allusion in the text must be assigned to Iamblicus, who, in the fourth century, had republished the Pythagorean theology of numbers, and endeavored to construct the world out of arithmetic, thinking everything could be solved by the aid of proportions and geometry. Bacon must not be understood in the text to censure the use but the abuse of mathematics and physical investigations, as in the "De Augmentis" (lib. iv. c. 6), he enumerates the multiplicity of demonstration scientific facts admit of, from this source. — *Ed.*

[60] See Livy, lib. ix. c. 17, where, in a digression on the probable effect of a contest between Rome and Alexander the Great, he says: "Non cum Dario rem esse dixisset: quem mulierum ac spadonum agmen trahentem inter purpuram atque aurum, oneratum fortunæ apparatibus, prædam veriùs quam hostem, nihil aliud quam ausus vana contemnere, incruentus devicit."

[61] The lowest axioms are such as spring from simple experience — such as in chemistry, that animal substances yield no fixed salt by calcination; in music, that concords intermixed with discords make harmony, *etc.* Intermediate axioms advance a step further, being the result of reflection, which, applied to our experimental knowledge, deduces laws from them, such as in optics of the first degree of generality, that the angle of incidence is equal to the angle of reflection; and in mechanics, Kepler's three laws of

motion, while his general law, that all bodies attract each other with forces proportional to their masses, and inversely as the squares of their distances, may be taken as one of the highest axioms. Yet so far is this principle from being only notional or abstract, it has presented us with a key which fits into the intricate wards of the heavens, and has laid bare to our gaze the principal mechanism of the universe. But natural philosophy in Bacon's day had not advanced beyond intermediate axioms, and the term notional or abstract is applied to those general axioms then current, not founded on the solid principles of inductive inquiry, but based upon *à priori* reasoning and airy metaphysics. — *Ed.*

62 This hope has been abundantly realized in the discovery of gravity and the decomposition of light, mainly by the inductive method. To a better philosophy we may also attribute the discovery of electricity, galvanism and their mutual connection with each other, and magnetism, the inventions of the air-pump, steam-engine and the chronometer.

63 As Bacon very frequently cites these authors, a slight notice of their labors may not be unacceptable to the reader. Bernardinus Telesius, born at Cosenza, in 1508, combated the Aristotelian system in a work entitled "De Rerum Natura juxta propria principia," *i.e.*, according to principles of his own. The proem of the work announces his design was to show that "the construction of the world, the magnitude and nature of the bodies contained in it, are not to be investigated by reasoning, which was done by the ancients, but are to be apprehended by the senses, and collected from the things themselves." He had, however, no sooner laid down this principle than he departed from it in practice, and pursued the deductive method he so much condemned in his predecessors. His first step was an assumption of principles as arbitrary as any of the empirical notions of antiquity; at the outset of his book he very quietly takes it for granted that heat is the principle of motion, cold of immobility, matter being assumed as the corporeal substratum, in which these incorporeal and active agents carry on their operations. Out of these abstract and ill-defined conceptions Telesius builds up a system quite as complete, symmetrical, and imaginative as any of the structures of antiquity.

Francis Patricius, born at Cherso, in Dalmatia, about 1529, was another physicist who rose up against Aristotle, and announced the dawn of a new philosophy. In 1593 appeared his "Nova de Universis Philosophia." He lays down a string of axioms, in which scholastic notions, physical discoveries, and theological dogmas, are strangely commingled, and erects upon them a system which represents all the grotesque features of theological empiricism.

Severinus, born in Jutland, in 1529, published an attack on Aristotle's natural history, but adopted fantasies which the Stagyrite ridiculed in his own day. He was a follower of Paracelsus, a Swiss enthusiast of the fifteenth century, who ignored the ancient doctrine of the four elements for salt, sulphur and mercury, and allied chemistry and medicine with mysticism. — *Ed.*

64 Bacon's apology is sound, and completely answers those German and French critics, who have refused him a niche in the philosophical pantheon. One German commentator, too modest to reveal his name,

accuses Bacon of ignorance of the calculus, though, in his day, Wallis had not yet stumbled upon the laws of continuous fractions; while Count de Maistre, in a coarse attack upon his genius, expresses his astonishment at finding Bacon unacquainted with discoveries which were not heard of till a century after his death. — *Ed.*

[65] Philip of Macedon.

[66] See Plato's Timæus.

[67] The saying of Philocrates when he differed from Demosthenes. — *Ed.*

[68] The old error of placing the deductive syllogism in antagonism to the inductive, as if they were not both parts of one system or refused to cohere together. So far from there being any radical opposition between them, it would not be difficult to show that Bacon's method was syllogistic in his sense of the term. For the suppressed premise of every Baconian enthymeme, viz., the acknowledged uniformity of the laws of nature as stated in the axiom, whatever has once occurred will occur again, must be assumed as the basis of every conclusion which he draws before we can admit its legitimacy. The opposition, therefore, of Bacon's method could not be directed against the old logic, for it assumed and exemplified its principles, but rather to the abusive application which the ancients made of this science, on turning its powers to the development of abstract principles which they imagined to be pregnant with the solution of the latent mysteries of the universe. Bacon justly overthrew these ideal notions, and accepted of no principle as a basis which was not guaranteed by actual experiment and observation; and so far he laid the foundations of a sound philosophy by turning the inductive logic to its proper account in the interpretation of nature.

[69] This is the opening of the Sixth Book of Lucretius. Bacon probably quoted from memory; the lines are —

"Primæ frugiferos fœtus mortalibus ægris Dididerunt quondam præclaro nomine Athenæ Et recreaverunt," *etc.*

The teeming corn, that feeble mortals crave, First, and long since, renowned Athens gave, And cheered their life — then taught to frame their laws.

[70] Prov. xxv. 2.

APHORISMS — BOOK II. ON THE INTERPRETATION OF NATURE, OR THE REIGN OF MAN

I. To generate and superinduce a new nature or new natures, upon a given body, is the labor and aim of human power: while to discover the form or true difference of a given nature, or the nature[71] to which such nature is owing, or source from which it emanates (for these terms approach nearest to an explanation of our meaning), is the labor and discovery of human knowledge; and subordinate to these primary labors are two others of a secondary nature and inferior stamp. Under the first must be ranked the transformation of concrete bodies from one to another, which is possible within certain limits; under the second, the discovery, in every species of generation and motion, of the latent and uninterrupted process from the manifest efficient and manifest subject matter up to the given form: and a like discovery of the latent conformation of bodies which are at rest instead of being in motion.

II. The unhappy state of man's actual knowledge is manifested even by the common assertions of the vulgar. It is rightly laid down that true knowledge is that which is deduced from causes. The division of four causes also is not amiss: matter, form, the efficient, and end or final cause.[72] Of these, however, the latter is so far from being beneficial, that it even corrupts the sciences, except in the intercourse of man with man. The discovery of form is considered desperate. As for the efficient cause and matter (according to the present system of inquiry and the received opinions concerning them, by which they are placed remote from, and without any latent process toward form), they are but desultory and superficial, and of scarcely any avail to real and active knowledge. Nor are we unmindful of our having pointed out and corrected above the error of the human mind, in assigning the first qualities of essence to forms.[73] For although nothing exists in nature except individual bodies,[74] exhibiting clear individual effects according to particular laws, yet in each branch of learning, that very law, its

investigation, discovery, and development, are the foundation both of theory and practice. This law, therefore, and its parallel in each science, is what we understand by the term form,[75] adopting that word because it has grown into common use, and is of familiar occurrence.

III. He who has learned the cause of a particular nature (such as whiteness or heat), in particular subjects only, has acquired but an imperfect knowledge: as he who can induce a certain effect upon particular substances only, among those which are susceptible of it, has acquired but an imperfect power. But he who has only learned the efficient and material cause (which causes are variable and mere vehicles conveying form to particular substances) may perhaps arrive at some new discoveries in matters of a similar nature, and prepared for the purpose, but does not stir the limits of things which are much more deeply rooted; while he who is acquainted with forms, comprehends the unity of nature in substances apparently most distinct from each other. He can disclose and bring forward, therefore (though it has never yet been done), things which neither the vicissitudes of nature, nor the industry of experiment, nor chance itself, would ever have brought about, and which would forever have escaped man's thoughts; from the discovery of forms, therefore, results genuine theory and free practice.

IV. Although there is a most intimate connection, and almost an identity between the ways of human power and human knowledge, yet, on account of the pernicious and inveterate habit of dwelling upon abstractions, it is by far the safest method to commence and build up the sciences from those foundations which bear a relation to the practical division, and to let them mark out and limit the theoretical. We must consider, therefore, what precepts, or what direction or guide, a person would most desire, in order to generate and superinduce any nature upon a given body: and this not in abstruse, but in the plainest language.

For instance, if a person should wish to superinduce the yellow color of gold upon silver, or an additional weight (observing always the laws of matter) or transparency on an opaque stone, or tenacity in glass, or vegetation on a substance which is not vegetable, we must (I say) consider what species of

precept or guide this person would prefer. And, first, he will doubtless be anxious to be shown some method that will neither fail in effect, nor deceive him in the trial of it; secondly, he will be anxious that the prescribed method should not restrict him and tie him down to peculiar means, and certain particular methods of acting; for he will, perhaps, be at loss, and without the power or opportunity of collecting and procuring such means. Now if there be other means and methods (besides those prescribed) of creating such a nature, they will perhaps be of such a kind as are in his power, yet by the confined limits of the precept he will be deprived of reaping any advantage from them; thirdly, he will be anxious to be shown something not so difficult as the required effect itself, but approaching more nearly to practice.

We will lay this down, therefore, as the genuine and perfect rule of practice, that it should be certain, free and preparatory, or having relation to practice. And this is the same thing as the discovery of a true form; for the form of any nature is such, that when it is assigned the particular nature infallibly follows. It is, therefore, always present when that nature is present, and universally attests such presence, and is inherent in the whole of it. The same form is of such a character, that if it be removed the particular nature infallibly vanishes. It is, therefore, absent, whenever that nature is absent, and perpetually testifies such absence, and exists in no other nature. Lastly, the true form is such, that it deduces the particular nature from some source of essence existing in many subjects, and more known (as they term it) to nature, than the form itself. Such, then, is our determination and rule with regard to a genuine and perfect theoretical axiom, that a nature be found convertible with a given nature, and yet such as to limit the more known nature, in the manner of a real genus. But these two rules, the practical and theoretical, are in fact the same, and that which is most useful in practice is most correct in theory.

V. But the rule or axiom for the transformation of bodies is of two kinds. The first regards the body as an aggregate or combination of simple natures. Thus, in gold are united the following circumstances: it is yellow, heavy, of a certain weight, malleable and ductile to a certain extent; it is not volatile, loses part of

its substance by fire, melts in a particular manner, is separated and dissolved by particular methods, and so of the other natures observable in gold. An axiom, therefore, of this kind deduces the subject from the forms of simple natures; for he who has acquired the forms and methods of superinducing yellowness, weight, ductility, stability, deliquescence, solution, and the like, and their degrees and modes, will consider and contrive how to unite them in any body, so as to transform[76] it into gold. And this method of operating belongs to primary action; for it is the same thing to produce one or many simple natures, except that man is more confined and restricted in his operations, if many be required, on account of the difficulty of uniting many natures together. It must, however, be observed, that this method of operating (which considers natures as simple though in a concrete body) sets out from what is constant, eternal, and universal in nature, and opens such broad paths to human power, as the thoughts of man can in the present state of things scarcely comprehend or figure to itself.

The second kind of axiom (which depends on the discovery of the latent process) does not proceed by simple natures, but by concrete bodies, as they are found in nature and in its usual course. For instance, suppose the inquiry to be, from what beginnings, in what manner, and by what process gold or any metal or stone is generated from the original menstruum, or its elements, up to the perfect mineral: or, in like manner, by what process plants are generated, from the first concretion of juices in the earth, or from seeds, up to the perfect plant, with the whole successive motion, and varied and uninterrupted efforts of nature; and the same inquiry be made as to a regularly deduced system of the generation of animals from coition to birth, and so on of other bodies.

Nor is this species of inquiry confined to the mere generation of bodies, but it is applicable to other changes and labors of nature. For instance, where an inquiry is made into the whole series and continued operation of the nutritive process, from the first reception of the food to its complete assimilation to the recipient;[77] or into the voluntary motion of animals, from the first impression of the imagination, and the continuous effects of the spirits, up to the bending and motion of the joints; or into the free motion of the tongue and lips, and other

accessories which give utterance to articulate sounds. For all these investigations relate to concrete or associated natures artificially brought together, and take into consideration certain particular and special habits of nature, and not those fundamental and general laws which constitute forms. It must, however, be plainly owned, that this method appears more prompt and easy, and of greater promise than the primary one.

In like manner the operative branch, which answers to this contemplative branch, extends and advances its operation from that which is usually observed in nature, to other subjects immediately connected with it, or not very remote from such immediate connection. But the higher and radical operations upon nature depend entirely on the primary axioms. Besides, even where man has not the means of acting, but only of acquiring knowledge, as in astronomy (for man cannot act upon, change, or transform the heavenly bodies), the investigation of facts or truth, as well as the knowledge of causes and coincidences, must be referred to those primary and universal axioms that regard simple natures; such as the nature of spontaneous rotation, attraction, or the magnetic force, and many others which are more common than the heavenly bodies themselves. For let no one hope to determine the question whether the earth or heaven revolve in the diurnal motion, unless he have first comprehended the nature of spontaneous rotation.

VI. But the latent process of which we speak, is far from being obvious to men's minds, beset as they now are. For we mean not the measures, symptoms, or degrees of any process which can be exhibited in the bodies themselves, but simply a continued process, which, for the most part, escapes the observation of the senses.

For instance, in all generations and transformations of bodies, we must inquire, what is in the act of being lost and escaping, what remains, what is being added, what is being diluted, what is being contracted, what is being united, what is being separated, what is continuous, what is broken off, what is urging

forward, what impedes, what predominates, what is subservient, and many other circumstances.

Nor are these inquiries again to be made in the mere generation and transformation of bodies only, but in all other alterations and fluctuations we must in like manner inquire; what precedes, what succeeds, what is quick, what is slow, what produces and what governs motion, and the like. All which matters are unknown and unattempted by the sciences, in their present heavy and inactive state. For, since every natural act is brought about by the smallest efforts,[78] or at least such as are too small to strike our senses, let no one hope that he will be able to direct or change nature unless he have properly comprehended and observed these efforts.

VII. In like manner, the investigation and discovery of the latent conformation in bodies is no less new, than the discovery of the latent process and form. For we as yet are doubtless only admitted to the antechamber of nature, and do not prepare an entrance into her presence-room. But nobody can endue a given body with a new nature, or transform it successfully and appropriately into a new body, without possessing a complete knowledge of the body so to be changed or transformed. For he will run into vain, or, at least, into difficult and perverse methods, ill adapted to the nature of the body upon which he operates. A clear path, therefore, toward this object also must be thrown open, and well supported.

Labor is well and usefully bestowed upon the anatomy of organized bodies, such as those of men and animals, which appears to be a subtile matter, and a useful examination of nature. The species of anatomy, however, is that of first sight, open to the senses, and takes place only in organized bodies. It is obvious, and of ready access, when compared with the real anatomy of latent conformation in bodies which are considered similar, particularly in specific objects and their parts; as those of iron, stone, and the similar parts of plants and animals, as the root, the leaf, the flower, the flesh, the blood, and bones, *etc.* Yet human industry has not completely neglected this species of anatomy; for we have an instance of it in the separation of similar bodies by distillation, and other

solutions, which shows the dissimilarity of the compound by the union of the homogeneous parts. These methods are useful, and of importance to our inquiry, although attended generally with fallacy: for many natures are assigned and attributed to the separate bodies, as if they had previously existed in the compound, which, in reality, are recently bestowed and superinduced by fire and heat, and the other modes of separation. Besides, it is, after all, but a small part of the labor of discovering the real conformation in the compound, which is so subtile and nice, that it is rather confused and lost by the operation of the fire, than discovered and brought to light.

A separation and solution of bodies, therefore, is to be effected, not by fire indeed, but rather by reasoning and true induction, with the assistance of experiment, and by a comparison with other bodies, and a reduction to those simple natures and their forms which meet, and are combined in the compound; and we must assuredly pass from Vulcan to Minerva, if we wish to bring to light the real texture and conformation of bodies, upon which every occult and (as it is sometimes called) specific property and virtue of things depends, and whence also every rule of powerful change and transformation is deduced.

For instance, we must examine what spirit is in every body,[79] what tangible essence; whether that spirit is copious and exuberant, or meagre and scarce, fine or coarse, aëriform or igniform, active or sluggish, weak or robust, progressive or retrograde, abrupt or continuous, agreeing with external and surrounding objects, or differing from them, *etc.* In like manner must we treat tangible essence (which admits of as many distinctions as the spirit), and its hairs, fibres, and varied texture. Again, the situation of the spirit in the corporeal mass, its pores, passages, veins, and cells, and the rudiments or first essays of the organic body, are subject to the same examination. In these, however, as in our former inquiries, and therefore in the whole investigation of latent conformation, the only genuine and clear light which completely dispels all darkness and subtile difficulties, is admitted by means of the primary axioms.

VIII. This method will not bring us to atoms,[80] which takes for granted the vacuum, and immutability of matter (neither of which hypotheses is correct), but

to the real particles such as we discover them to be. Nor is there any ground for alarm at this refinement as if it were inexplicable, for, on the contrary, the more inquiry is directed to simple natures, the more will everything be placed in a plain and perspicuous light, since we transfer our attention from the complicated to the simple, from the incommensurable to the commensurable, from surds to rational quantities, from the indefinite and vague to the definite and certain; as when we arrive at the elements of letters, and the simple tones of concords. The investigation of nature is best conducted when mathematics are applied to physics. Again, let none be alarmed at vast numbers and fractions, for in calculation it is as easy to set down or to reflect upon a thousand as a unit, or the thousandth part of an integer as an integer itself.

IX.[81] From the two kinds of axioms above specified, arise the two divisions of philosophy and the sciences, and we will use the commonly adopted terms which approach the nearest to our meaning, in our own sense. Let the investigation of forms, which (in reasoning at least, and after their own laws), are eternal and immutable, constitute metaphysics,[82] and let the investigation of the efficient cause of matter, latent process, and latent conformation (which all relate merely to the ordinary course of nature, and not to her fundamental and eternal laws), constitute physics. Parallel to these, let there be two practical divisions; to physics that of mechanics, and to metaphysics that of magic, in the purest sense of the term, as applied to its ample means, and its command over nature.

X. The object of our philosophy being thus laid down, we proceed to precepts, in the most clear and regular order. The signs for the interpretation of nature comprehend two divisions; the first regards the eliciting or creating of axioms from experiment, the second the deducing or deriving of new experiments from axioms. The first admits of three subdivisions into ministrations. 1. To the senses. 2. To the memory. 3. To the mind or reason.

For we must first prepare as a foundation for the whole, a complete and accurate natural and experimental history. We must not imagine or invent, but discover the acts and properties of nature.

But natural and experimental history is so varied and diffuse, that it confounds and distracts the understanding unless it be fixed and exhibited in due order. We must, therefore, form tables and co-ordinations of instances, upon such a plan, and in such order that the understanding may be enabled to act upon them.

Even when this is done, the understanding, left to itself and to its own operation, is incompetent and unfit to construct its axioms without direction and support. Our third ministration, therefore, must be true and legitimate induction, the very key of interpretation. We must begin, however, at the end, and go back again to the others.

XI. The investigation of forms proceeds thus: a nature being given, we must first present to the understanding all the known instances which agree in the same nature, although the subject matter be considerably diversified. And this collection must be made as a mere history, and without any premature reflection, or too great degree of refinement. For instance; take the investigation of the form of heat.

Instances agreeing in the Form of Heat

- 1. The rays of the sun, particularly in summer, and at noon.
- 2. The same reflected and condensed, as between mountains, or along walls, and particularly in burning mirrors.
- 3. Ignited meteors.
- 4. Burning lightning.
- 5. Eruptions of flames from the cavities of mountains, *etc.*
- 6. Flame of every kind.
- 7. Ignited solids.
- 8. Natural warm baths.
- 9. Warm or heated liquids.
- 10. Warm vapors and smoke; and the air itself, which admits a most powerful and violent heat if confined, as in reverberating furnaces.
- 11. Damp hot weather, arising from the constitution of the air, without any reference to the time of the year.

- 12. Confined and subterraneous air in some caverns, particularly in winter.
- 13. All shaggy substances, as wool, the skins of animals, and the plumage of birds, contain some heat.
- 14. All bodies, both solid and liquid, dense and rare (as the air itself), placed near fire for any time.
- 15. Sparks arising from the violent percussion of flint and steel.
- 16. All bodies rubbed violently, as stone, wood, cloth, etc., so that rudders, and axles of wheels, sometimes catch fire, and the West Indians obtain fire by attrition.
- 17. Green and moist vegetable matter confined and rubbed together, as roses, peas in baskets; so hay, if it be damp when stacked, often catches fire.
- 18. Quicklime sprinkled with water.
- 19. Iron, when first dissolved by acids in a glass, and without any application to fire; the same of tin, but not so intensely.
- 20. Animals, particularly internally; although the heat is not perceivable by the touch in insects, on account of their small size.
- 21. Horse dung, and the like excrement from other animals, when fresh.
- 22. Strong oil of sulphur and of vitriol exhibit the operation of heat in burning linen.
- 23. As does the oil of marjoram, and like substances, in burning the bony substance of the teeth.
- 24. Strong and well rectified spirits of wine exhibit the same effects; so that white of eggs when thrown into it grows hard and white, almost in the same manner as when boiled, and bread becomes burned and brown as if toasted.
- 25. Aromatic substances and warm plants, as the dracunculus [arum], old nasturtium, etc., which, though they be not warm to the touch (whether whole or pulverized), yet are discovered by the

tongue and palate to be warm and almost burning when slightly masticated.

- 26. Strong vinegar and all acids, on any part of the body not clothed with the epidermis, as the eye, tongue, or any wounded part, or where the skin is removed, excite a pain differing but little from that produced by heat.
- 27. Even a severe and intense cold produces a sensation of burning.[83]

"Nec Boreæ penetrabile frigus adurit."

- 28. Other instances.

We are wont to call this a table of existence and presence.

XII. We must next present to the understanding instances which do not admit of the given nature, for form (as we have observed) ought no less to be absent where the given nature is absent, than to be present where it is present. If, however, we were to examine every instance, our labor would be infinite.

Negatives, therefore, must be classed under the affirmatives, and the want of the given nature must be inquired into more particularly in objects which have a very close connection with those others in which it is present and manifest. And this we are wont to term a table of deviation or of absence in proximity.

Proximate Instances wanting the Nature of Heat

The rays of the moon, stars, and comets, are not found to be warm to the touch, nay, the severest cold has been observed to take place at the full of the moon. Yet the larger fixed stars are supposed to increase and render more intense the heat of the sun, as he approaches them, when the sun is in the sign of the Lion, for instance, and in the dog-days.[84]

The rays of the sun in what is called the middle region of the air give no heat, to account for which the commonly assigned reason is satisfactory; namely, that that region is neither sufficiently near to the body of the sun whence the rays emanate, nor to the earth whence they are reflected. And the fact is manifested by snow being perpetual on the tops of mountains, unless extremely lofty. But it

is observed, on the other hand, by some, that at the Peak of Teneriffe, and also among the Andes of Peru, the tops of the mountains are free from snow, which only lies in the lower part as you ascend. Besides, the air on the summit of these mountains is found to be by no means cold, but only thin and sharp; so much so, that in the Andes it pricks and hurts the eyes from its extreme sharpness, and even excites the orifice of the stomach and produces vomiting. The ancients also observed, that the rarity of the air on the summit of Olympus was such, that those who ascended it were obliged to carry sponges moistened with vinegar and water, and to apply them now and then to their nostrils, as the air was not dense enough for their respiration; on the summit of which mountain it is also related, there reigned so great a serenity and calm, free from rain, snow, or wind, that the letters traced upon the ashes of the sacrifices on the altar of Jupiter, by the fingers of those who had offered them, would remain undisturbed till the next year. Those even, who at this day go to the top of the Peak of Teneriffe, walk by night and not in the daytime, and are advised and pressed by their guides, as soon as the sun rises, to make haste in their descent, on account of the danger (apparently arising from the rarity of the atmosphere), lest their breathing should be relaxed and suffocated.[85]

The reflection of the solar rays in the polar regions is found to be weak and inefficient in producing heat, so that the Dutch, who wintered in Nova Zembla, and expected that their vessel would be freed about the beginning of July from the obstruction of the mass of ice which had blocked it up, were disappointed and obliged to embark in their boat. Hence the direct rays of the sun appear to have but little power even on the plain, and when reflected, unless they are multiplied and condensed, which takes place when the sun tends more to the perpendicular; for, then, the incidence of the rays occurs at more acute angles, so that the reflected rays are nearer to each other, while, on the contrary, when the sun is in a very oblique position, the angles of incidence are very obtuse, and the reflected rays at a greater distance. In the meantime it must be observed, that there may be many operations of the solar rays, relating, too, to the nature of heat, which are not proportioned to our touch, so that, with regard to us, they do

not tend to produce warmth, but, with regard to some other bodies, have their due effect in producing it.

Let the following experiment be made. Take a lens the reverse of a burning-glass, and place it between the hand and the solar rays, and observe whether it diminish the heat of the sun as a burning-glass increases it. For it is clear, with regard to the visual rays, that in proportion as the lens is made of unequal thickness in the middle and at its sides, the images appear either more diffused or contracted. It should be seen, therefore, if the same be true with regard to heat.

Let the experiment be well tried, whether the lunar rays can be received and collected by the strongest and best burning-glasses, so as to produce even the least degree of heat.[86] But if that degree be, perhaps, so subtile and weak, as not to be perceived or ascertained by the touch, we must have recourse to those glasses which indicate the warm or cold state of the atmosphere, and let the lunar rays fall through the burning-glass on the top of this thermometer, and then notice if the water be depressed by the heat.[87]

Let the burning-glass be tried on warm objects which emit no luminous rays, as heated but not ignited iron or stone, or hot water, or the like; and observe whether the heat become increased and condensed, as happens with the solar rays.

Let it be tried on common flame.

The effect of comets (if we can reckon them among meteors[88]) in augmenting the heat of the season is not found to be constant or clear, although droughts have generally been observed to follow them. However, luminous lines, and pillars, and openings, and the like, appear more often in winter than in summer, and especially with the most intense cold but joined with drought. Lightning, and coruscations, and thunder, however, rarely happen in winter; and generally at the time of the greatest heats. The appearances we term falling stars are generally supposed to consist of some shining and inflamed viscous substance, rather than of violently hot matter; but let this be further investigated.

Some coruscations emit light without burning, but are never accompanied by thunder.

Eructations and eruptions of flame are to be found in cold climates as well as in hot, as in Iceland and Greenland; just as the trees of cold countries are sometimes inflammable and more pitchy and resinous than in warm, as the fir, pine, and the like. But the position and nature of the soil, where such eruptions are wont to happen, is not yet sufficiently investigated to enable us to subjoin a negative instance to the affirmative.

All flame is constantly more or less warm, and this instance is not altogether negative; yet it is said that the ignis fatuus (as it is called), and which sometimes is driven against walls, has but little heat; perhaps it resembles that of spirits of wine, which is mild and gentle. That flame, however, appears yet milder, which in some well authenticated and serious histories is said to have appeared round the head and hair of boys and virgins, and instead of burning their hair, merely to have played about it. And it is most certain that a sort of flash, without any evident heat, has sometimes been seen about a horse when sweating at night, or in damp weather. It is also a well known fact,[89] and it was almost considered as a miracle, that a few years since a girl's apron sparkled when a little shaken or rubbed, which was, perhaps, occasioned by the alum or salts with which the apron was imbued, and which, after having been stuck together and incrusted rather strongly, were broken by the friction. It is well known that all sugar, whether candied or plain, if it be hard, will sparkle when broken or scraped in the dark. In like manner sea and salt water is sometimes found to shine at night when struck violently by the oar. The foam of the sea when agitated by tempests also sparkles at night, and the Spaniards call this appearance the sea's lungs. It has not been sufficiently ascertained what degree of heat attends the flame which the ancient sailors called Castor and Pollux, and the moderns call St. Ermus' fire.

Every ignited body that is red-hot is always warm, although without flame, nor is any negative instance subjoined to this affirmative. Rotten wood, however, approaches nearly to it, for it shines at night, and yet is not found to be warm;

and the putrefying scales of fish which shine in the same manner are not warm to the touch, nor the body of the glowworm, or of the fly called Lucciola.[90]

The situation and nature of the soil of natural warm baths has not been sufficiently investigated, and therefore a negative instance is not subjoined.

To the instances of warm liquids we may subjoin the negative one of the peculiar nature of liquids in general; for no tangible liquid is known that is at once warm in its nature and constantly continues warm; but their heat is only superinduced as an adventitious nature for a limited time, so that those which are extremely warm in their power and effect, as spirits of wine, chemical aromatic oils, the oils of vitriol and sulphur, and the like, and which speedily burn, are yet cold at first to the touch, and the water of natural baths, poured into any vessel and separated from its source, cools down like water heated by the fire. It is, however, true that oily substances are rather less cold to the touch than those that are aqueous, oil for instance than water, silk than linen; but this belongs to the table of degrees of cold.

In like manner we may subjoin a negative instance to that of warm vapor, derived from the nature of vapor itself, as far as we are acquainted with it. For exhalations from oily substances, though easily inflammable, are yet never warm unless recently exhaled from some warm substance.

The same may be said of the instance of air; for we never perceive that air is warm unless confined or pressed, or manifestly heated by the sun, by fire, or some other warm body.

A negative instance is exhibited in weather by its coldness with an east or north wind, beyond what the season would lead us to expect, just as the contrary takes place with the south or west winds. An inclination to rain (especially in winter) attends warm weather, and to frost cold weather.

A negative instance as to air confined in caverns may be observed in summer. Indeed, we should make a more diligent inquiry into the nature of confined air. For in the first place the qualities of air in its own nature with regard to heat and cold may reasonably be the subject of doubt; for air evidently derives its heat from the effects of celestial bodies, and possibly its cold from the exhalation of

the earth, and in the mid region of air (as it is termed) from cold vapors and snow, so that no judgment can be formed of the nature of air by that which is out of doors and exposed, but a more correct one might be derived from confined air. It is necessary, however, that the air should be inclosed in a vessel of such materials as would not imbue it with heat or cold of themselves, nor easily admit the influence of the external atmosphere. The experiment should be made, therefore, with an earthen jar, covered with folds of leather to protect it from the external air, and the air should be kept three or four days in this vessel well closed. On opening the jar, the degree of heat may be ascertained either by the hand or a graduated glass tube.

There is a similar doubt as to whether the warmth of wool, skins, feathers, and the like, is derived from a slight inherent heat, since they are animal excretions, or from their being of a certain fat and oily nature that accords with heat, or merely from the confinement and separation of air which we spoke of in the preceding paragraph;[91] for all air appears to possess a certain degree of warmth when separated from the external atmosphere. Let an experiment be made, therefore, with fibrous substances of linen, and not of wool, feathers, or silk, which are animal excretions. For it is to be observed that all powders (where air is manifestly inclosed) are less cold than the substances when whole, just as we imagine froth (which contains air) to be less cold than the liquid itself.

We have here no exactly negative instance, for we are not acquainted with any body tangible or spirituous which does not admit of heat when exposed to the fire. There is, however, this difference, that some admit it more rapidly, as air, oil, and water, others more slowly, as stone and metals.[92] This, however, belongs to the table of degrees.

No negative is here subjoined, except the remark that sparks are not kindled by flint and steel, or any other hard substance, unless some small particles of the stone or metal are struck off, and that the air never forms them by friction, as is commonly supposed; besides, the sparks from the weight of the ignited

substance have a tendency to descend rather than to rise, and when extinguished become a sort of dark ash.

We are of opinion that here again there is no negative; for we are not acquainted with any tangible body which does not become decidedly warm by friction, so that the ancients feigned that the gods had no other means or power of creating heat than the friction of air, by rapid and violent rotation. On this point, however, further inquiry must be made, whether bodies projected by machines (as balls from cannon) do not derive some degree of heat from meeting the air, which renders them somewhat warm when they fall. The air in motion rather cools than heats, as in the winds, the bellows, or breath when the mouth is contracted. The motion, however, in such instances is not sufficiently rapid to excite heat, and is applied to a body of air, and not to its component parts, so that it is not surprising that heat should not be generated.

We must make a more diligent inquiry into this instance; for herbs and green and moist vegetables appear to possess a latent heat, so small, however, as not to be perceived by the touch in single specimens, but when they are united and confined, so that their spirit cannot exhale into the air, and they rather warm each other, their heat is at once manifested, and even flame occasionally in suitable substances.

Here, too, we must make a more diligent inquiry; for quicklime, when sprinkled with water, appears to conceive heat, either from its being collected into one point (as we observed of herbs when confined), or from the irritation and exasperation of the fiery spirit by water, which occasions a conflict and struggle. The true reason will more readily be shown if oil be used instead of water, for oil will equally tend to collect the confined spirit, but not to irritate. The experiment may be made more general, both by using the ashes and calcined products of different bodies and by pouring different liquids upon them.

A negative instance may be subjoined of other metals which are more soft and soluble; for leaf gold dissolved by aqua regia, or lead by aqua fortis, are not warm to the touch while dissolving, no more is quicksilver (as far as I remember), but silver excites a slight heat, and so does copper, and tin yet more

plainly, and most of all iron and steel, which excite not only a powerful heat, but a violent bubbling. The heat, therefore, appears to be occasioned by the struggle which takes place when these strong dissolvents penetrate, dig into, and tear asunder the parts of those substances, while the substances themselves resist. When, however, the substances yield more easily, scarcely any heat is excited.

There is no negative instance with regard to the heat of animals, except in insects (as has been observed), owing to their small size; for in fishes, as compared with land animals, a lower degree rather than a deprivation of heat is observable. In plants and vegetables, both as to their exudations and pith when freshly exposed, there is no sensible degree of heat. But in animals there is a great difference in the degree, both in particular parts (for the heat varies near the heart, the brain, and the extremities) and in the circumstances in which they are placed, such as violent exercise and fevers.

Here, again, there is scarcely a negative instance. I might add that the excrements of animals, even when they are no longer fresh, possess evidently some effective heat, as is shown by their enriching the soil.

Such liquids (whether oily or watery) as are intensely acrid exhibit the effects of heat, by the separation and burning of bodies after some little action upon them, yet they are not at first warm to the touch, but they act according to their affinity and the pores of the substances to which they are applied; for aqua regia dissolves gold but not silver — on the contrary, aqua fortis dissolves silver but not gold; neither of them dissolves glass, and so of the rest.

Let spirits of wine be tried on wood, or butter, wax, or pitch, to see if this will melt them at all by their heat; for the twenty-fourth instance shows that they possess properties resembling those of heat in causing incrustation. Let an experiment also be made with a graduated glass or calendar,[93] concave at the top, by pouring well-rectified spirits of wine into the cavity, and covering it up in order that they may the better retain their heat, then observe whether their heat make the water descend.

Spices and acrid herbs are sensibly warm to the palate, and still more so when taken internally; one should see, therefore, on what other substances they exhibit

the effects of heat. Now, sailors tell us that when large quantities of spices are suddenly opened, after having been shut up for some time, there is some danger of fever and inflammation to those who stir them or take them out. An experiment might, therefore, be made whether such spices and herbs, when produced, will, like smoke, dry fish and meat hung up over them.

There is an acrid effect and a degree of penetration in cold liquids, such as vinegar and oil of vitriol, as well as in warm, such as oil of marjoram and the like; they have, therefore, an equal effect in causing animated substances to smart, and separating and consuming inanimate parts. There is not any negative instance as to this, nor does there exist any animal pain unaccompanied by the sensation of heat.

There are many effects common to cold and heat, however different in their process; for snowballs appear to burn boys' hands after a little time, and cold no less than fire preserves bodies from putrefaction — besides both heat and cold contract bodies. But it is better to refer these instances and the like to the investigation of cold.

XIII. In the third place we must exhibit to the understanding the instances in which that nature, which is the object of our inquiries, is present in a greater or less degree, either by comparing its increase and decrease in the same object, or its degree in different objects; for since the form of a thing is its very essence, and the thing only differs from its form as the apparent from the actual object, or the exterior from the interior, or that which is considered with relation to man from that which is considered with relation to the universe; it necessarily follows that no nature can be considered a real form which does not uniformly diminish and increase with the given nature. We are wont to call this our Table of Degrees, or Comparative Instances.

Table of the Degrees or Comparative Instances of Heat

We will first speak of those bodies which exhibit no degree of heat sensible to the touch, but appear rather to possess a potential heat, or disposition and

preparation for it. We will then go on to others, which are actually warm to the touch, and observe the strength and degree of it.

- 1. There is no known solid or tangible body which is by its own nature originally warm; for neither stone, metal, sulphur, fossils, wood, water, nor dead animal carcasses are found warm. The warm springs in baths appear to be heated accidentally, by flame, subterraneous fire (such as is thrown up by Etna and many other mountains), or by the contact of certain bodies, as heat is exhibited in the dissolution of iron and tin. The degree of heat, therefore, in inanimate objects is not sensible to our touch; but they differ in their degrees of cold, for wood and metal are not equally cold.[94] This, however, belongs to the Table of Degrees of Cold.
- 2. But with regard to potential heat and predisposition to flame, we find many inanimate substances wonderfully adapted to it, as sulphur, naphtha, and saltpetre.
- 3. Bodies which have previously acquired heat, as horse dung from the animal, or lime, and perhaps ashes and soot from fire, retain some latent portion of it. Hence distillations and separations of substances are effected by burying them in horse dung, and heat is excited in lime by sprinkling it with water (as has been before observed).
- 4. In the vegetable world we know of no plant, nor part of any plant (as the exudations or pith) that is warm to man's touch. Yet (as we have before observed) green weeds grow warm when confined, and some vegetables are warm and others cold to our internal touch, *i.e.*, the palate and stomach, or even after a while to our external skin (as is shown in plasters and ointments).
- 5. We know of nothing in the various parts of animals, when dead or detached from the rest, that is warm to the touch; for horse dung itself does not retain its heat, unless it be confined and buried. All dung, however, appears to possess a potential heat, as in manuring

fields; so also dead bodies are endued with this latent and potential heat to such a degree, that in cemeteries where people are interred daily the earth acquires a secret heat, which consumes any recently deposited body much sooner than pure earth; and they tell you that the people of the East are acquainted with a fine soft cloth, made of the down of birds, which can melt butter wrapped gently up in it by its own warmth.

- 6. Manures, such as every kind of dung, chalk, sea-sand, salt and the like, have some disposition toward heat.
- 7. All putrefaction exhibits some slight degree of heat, though not enough to be perceptible by the touch; for neither the substances which by putrefaction are converted into animalculæ,[95] as flesh and cheese, nor rotten wood which shines in the dark, are warm to the touch. The heat, however, of putrid substances displays itself occasionally in a disgusting and strong scent.
- 8. The first degree of heat, therefore, in substances which are warm to the human touch appears to be that of animals, and this admits of a great variety of degrees, for the lowest (as in insects) is scarcely perceptible, the highest scarcely equals that of the sun's rays in warm climates and weather, and is not so acute as to be insufferable to the hand. It is said, however, of Constantius, and some others of a very dry constitution and habit of body, that when attacked with violent fevers, they became so warm as to appear almost to burn the hand applied to them.
- 9. Animals become more warm by motion and exercise, wine and feasting, venery, burning fevers, and grief.
- 10. In the paroxysm of intermittent fevers the patients are at first seized with cold and shivering, but soon afterward become more heated than at first — in burning and pestilential fevers they are hot from the beginning.

- 11. Let further inquiry be made into the comparative heat of different animals, as fishes, quadrupeds, serpents, birds, and also of the different species, as the lion, the kite, or man; for, according to the vulgar opinion, fishes are the least warm internally, and birds the most, particularly doves, hawks, and ostriches.
- 12. Let further inquiry be made as to the comparative heat in different parts and limbs of the same animal; for milk, blood, seed, and eggs are moderately warm, and less hot than the outward flesh of the animal when in motion or agitated. The degree of heat of the brain, stomach, heart, and the rest, has not yet been equally well investigated.
- 13. All animals are externally cold in winter and cold weather, but are thought to be internally warmer.
- 14. The heat of the heavenly bodies, even in the warmest climates and seasons, never reaches such a pitch as to light or burn the driest wood or straw, or even tinder without the aid of burning-glasses. It can, however, raise vapor from moist substances.
- 15. Astronomers tell us that some stars are hotter than others. Mars is considered the warmest after the Sun, then Jupiter, then Venus. The Moon and, above all, Saturn, are considered to be cold. Among the fixed stars Sirius is thought the warmest, then Cor Leonis or Regulus, then the lesser Dog-star.
- 16. The sun gives out more heat as it approaches toward the perpendicular or zenith, which may be supposed to be the case with the other planets, according to their degree of heat; for instance, that Jupiter gives out more heat when situated beneath Cancer or Leo than when he is beneath Capricorn and Aquarius.
- 17. It is to be supposed that the sun and other planets give more heat in perigee, from their approximation to the earth, than when in apogee. But if in any country the sun should be both in its perigee and nearer to the perpendicular at the same time, it must necessarily

give out more heat than in a country where it is also in perigee, but situated more obliquely; so that the comparative altitude of the planets should be observed, and their approach to or declination from the perpendicular in different countries.

- 18. The sun and other planets are thought also to give out more heat in proportion as they are nearer to the larger fixed stars, as when the sun is in Leo he is nearer Cor Leonis, Cauda Leonis, Spica Virginis, Sirius, and the lesser Dog-star, than when he is in Cancer, where, however, he approaches nearer to the perpendicular. It is probable, also, that the quarters of the heavens produce a greater heat (though not perceptibly), in proportion as they are adorned with a greater number of stars, particularly those of the first magnitude.
- 19. On the whole, the heat of the heavenly bodies is augmented in three ways: 1. The approach to the perpendicular; 2. Proximity or their perigee; 3. The conjunction or union of stars.
- 20. There is a very considerable difference between the degree of heat in animals, and even in the rays of the heavenly bodies (as they reach us), and the heat of the most gentle flame, and even of all ignited substances, nay, liquids, or the air itself when unusually heated by fire. For the flame of spirit of wine, though diffused and uncollected, is yet able to set straw, linen, or paper on fire, which animal heat, or that of the sun, will never accomplish without a burning-glass.
- 21. There are, however, many degrees of strength and weakness in flame and ignited bodies: but no diligent inquiry has been made in this respect, and we must, therefore, pass it hastily over. Of all flames, that of spirits of wine appears to be the most gentle, except perhaps the ignis fatuus, or the flashes from the perspiration of animals. After this we should be inclined to place the flame of light and porous vegetables, such as straw, reeds, and dried leaves; from which the flame of hair or feathers differs but little. Then, perhaps,

comes the flame of wood, particularly that which contains but little rosin or pitch; that of small wood, however (such as is usually tied up in fagots), is milder than that of the trunks or roots of trees. This can be easily tried in iron furnaces, where a fire of fagots or branches of trees is of little service. Next follows the flame of oil, tallow, wax, and the like oily and fat substances, which are not very violent. But a most powerful heat is found in pitch and rosin, and a still greater in sulphur, camphor, naphtha, saltpetre, and salts (after they have discharged their crude matter), and in their compounds; as in gunpowder, Greek fire (vulgarly called wild fire), and its varieties, which possess such a stubborn heat as scarcely to be extinguished by water.

- 22. We consider that the flame which results from some imperfect metals is very strong and active; but on all these points further inquiry should be made.
- 23. The flame of vivid lightning appears to exceed all the above, so as sometimes to have melted even wrought iron into drops, which the other flames cannot accomplish.
- 24. In ignited bodies there are different degrees of heat, concerning which, also, a diligent inquiry has not been made. We consider the faintest heat to be that of tinder, touchwood, and dry rope match, such as is used for discharging cannon. Next follows that of ignited charcoal or cinders, and even bricks, and the like; but the most violent is that of ignited metals, as iron, copper, and the like. Further inquiry, however, must be made into this also.
- 25. Some ignited bodies are found to be much warmer than some flames; for instance, red hot iron is much warmer, and burns more than the flame of spirits of wine.
- 26. Some bodies even not ignited, but only heated by the fire, as boiling water, and the air confined in reverberatories, surpass in heat many flames and ignited substances.

- 27. Motion increases heat,[96] as is shown in the bellows and the blowpipe; for the harder metals are not dissolved or melted by steady quiet fire, without the aid of the blowpipe.
- 28. Let an experiment be made with burning-glasses; in which respect I have observed, that if a glass be placed at the distance of ten inches, for instance, from the combustible object, it does not kindle or burn it so readily, as if the glass be placed at the distance of five inches (for instance), and be then gradually and slowly withdrawn to the distance of ten inches. The cone and focus of the rays, however, are the same, but the mere motion increases the effect of the heat.
- 29. Conflagrations, which take place with a high wind, are thought to make greater way against than with the wind, because when the wind slackens, the flame recoils more rapidly than it advances when the wind is favorable.
- 30. Flame does not burst out or arise unless it have some hollow space to move and exert itself in, except in the exploding flame of gunpowder, and the like, where the compression and confinement of the flame increase its fury.
- 31. The anvil becomes so hot by the hammer, that if it were a thin plate it might probably grow red, like ignited iron by repeated strokes. Let the experiment be tried.
- 32. But in ignited bodies that are porous, so as to leave room for the fire to move itself, if its motion be prevented by strong compression, the fire is immediately extinguished; thus it is with tinder, or the burning snuff of a candle or lamp, or even hot charcoal or cinders; for when they are squeezed by snuffers, or the foot, and the like, the effect of the fire instantly ceases.
- 33. The approach toward a hot body increases heat in proportion to the approximation; a similar effect to that of light, for the nearer any object is placed toward the light, the more visible it becomes.

- 34. The[97] union of different heats increases heat, unless the substances be mixed; for a large and small fire in the same spot tend mutually to increase each other's heat, but lukewarm water poured into boiling water cools it.
- 35. The continued neighborhood of a warm body increases heat. For the heat, which perpetually passes and emanates from it, being mixed with that which preceded it, multiplies the whole. A fire, for instance, does not warm a room in half an hour as much as the same fire would in an hour. This does not apply to light, for a lamp or candle placed in a spot gives no more light by remaining there, than it did at first.
- 36. The irritation of surrounding cold increases heat, as may be seen in fires during a sharp frost. We think that this is owing not merely to the confinement and compression of the heat (which forms a sort of union), but also by the exasperation of it, as when the air or a stick are violently compressed or bent, they recoil, not only to the point they first occupied, but still further back. Let an accurate experiment, therefore, be made with a stick, or something of the kind, put into the flame, in order to see whether it be not sooner burned at the sides than in the middle of it.[98]
- 37. There are many degrees in the susceptibility of heat. And, first, it must be observed how much a low gentle heat changes and partially warms even the bodies least susceptible of it. For even the heat of the hand imparts a little warmth to a ball of lead or other metal held a short time in it; so easily is heat transmitted and excited, without any apparent change in the body.
- 38. Of all bodies that we are acquainted with, air admits and loses heat the most readily, which is admirably seen in weather-glasses, whose construction is as follows: Take a glass with a hollow belly, and a thin and long neck; turn it upside down, and place it with its mouth downward into another glass vessel containing water; the end

of the tube touching the bottom of the vessel, and the tube itself leaning a little on the edge, so as to be fixed upright. In order to do this more readily, let a little wax be applied to the edge, not, however, so as to block up the orifice, lest, by preventing the air from escaping, the motion, which we shall presently speak of, and which is very gentle and delicate, should be impeded.

Before the first glass be inserted in the other, its upper part (the belly) should be warmed at the fire. Then upon placing it as we have described, the air (which was dilated by the heat), after a sufficient time has been allowed for it to lose the additional temperature, will restore and contract itself to the same dimensions as that of the external or common atmosphere at the moment of immersion, and the water will be attracted upward in the tube to a proportionate extent. A long narrow slip of paper should be attached to the tube, divided into as many degrees as you please. You will then perceive, as the weather grows warmer or colder, that the air contracts itself into a narrower space in cold weather and dilates in the warm, which will be exhibited by the rising of the water as the air contracts itself, and its depression as the air dilates. The sensibility of the air with regard to heat or cold is so delicate and exquisite, that it far exceeds the human touch, so that a ray of sunshine, the heat of the breath, and much more, that of the hand placed on the top of the tube, immediately causes an evident depression of the water. We think, however, that the spirit of animals possesses a much more delicate susceptibility of heat and cold, only that it is impeded and blunted by the grossness of their bodies.

- 39. After air, we consider those bodies to be most sensible of heat, which have been recently changed and contracted by cold, as snow and ice; for they begin to be dissolved and melt with the first mild weather. Next, perhaps, follows quicksilver; then greasy substances, as oil, butter, and the like; then wood; then water; lastly, stones and metals, which do not easily grow hot, particularly toward their centre.[99] When heated, however, they retain their temperature for a very long time; so that a brick or stone, or hot iron, plunged in a

basin of cold water, and kept there for a quarter of an hour or thereabout, retains such a heat as not to admit of being touched.

- 40. The less massive the body is, the more readily it grows warm at the approach of a heated body, which shows that heat with us is somewhat averse to a tangible mass.[100]
- 41. Heat with regard to the human senses and touch is various and relative, so that lukewarm water appears hot if the hand be cold, and cold if the hand be hot.

XIV. Any one may readily see how poor we are in history, since in the above tables, besides occasionally inserting traditions and report instead of approved history and authentic instances (always, however, adding some note if their credit or authority be doubtful), we are often forced to subjoin, “Let the experiment be tried — Let further inquiry be made.”

XV. We are wont to term the office and use of these three tables the presenting a review of instances to the understanding; and when this has been done, induction itself is to be brought into action. For on an individual review of all the instances a nature is to be found, such as always to be present and absent with the given nature, to increase and decrease with it, and, as we have said, to form a more common limit of the nature. If the mind attempt this affirmatively from the first (which it always will when left to itself), there will spring up phantoms, mere theories and ill-defined notions, with axioms requiring daily correction. These will, doubtless, be better or worse, according to the power and strength of the understanding which creates them. But it is only for God (the bestower and creator of forms), and perhaps for angels and intelligences, at once to recognize forms affirmatively at the first glance of contemplation: man, at lest, is unable to do so, and is only allowed to proceed first by negatives, and then to conclude with affirmatives, after every species of exclusion.

XVI. We must, therefore, effect a complete solution and separation of nature; not by fire, but by the mind, that divine fire. The first work of legitimate induction, in the discovery of forms, is rejection, or the exclusive instances of individual natures, which are not found in some one instance where the given

nature is present, or are found in any one instance where it is absent, or are found to increase in any one instance where the given nature decreases, or the reverse. After an exclusion correctly effected, an affirmative form will remain as the residuum, solid, true, and well defined, while all volatile opinions go off in smoke. This is readily said; but we must arrive at it by a circuitous route. We shall perhaps, however, omit nothing that can facilitate our progress.

XVII. The first and almost perpetual precaution and warning which we consider necessary is this; that none should suppose from the great part assigned by us to forms, that we mean such forms as the meditations and thoughts of men have hitherto been accustomed to. In the first place, we do not at present mean the concrete forms, which (as we have observed) are in the common course of things compounded of simple natures, as those of a lion, an eagle, a rose, gold, or the like. The moment for discussing these will arrive when we come to treat of the latent process and latent conformation, and the discovery of them as they exist in what are called substances, or concrete natures.

Nor again, would we be thought to mean (even when treating of simple natures) any abstract forms or ideas, either undefined or badly defined in matter. For when we speak of forms, we mean nothing else than those laws and regulations of simple action which arrange and constitute any simple nature, such as heat, light, weight, in every species of matter, and in a susceptible subject. The form of heat or form of light, therefore, means no more than the law of heat or the law of light. Nor do we ever abstract or withdraw ourselves from things, and the operative branch of philosophy. When, therefore, we say (for instance) in our investigation of the form of heat, Reject rarity, or, Rarity is not of the form of heat, it is the same as if we were to say, Man can superinduce heat on a dense body, or the reverse, Man can abstract or ward off heat from a rare body.

But if our forms appear to any one to be somewhat abstracted, from their mingling and uniting heterogeneous objects (the heat, for instance, of the heavenly bodies appears to be very different from that of fire; the fixed red of

the rose and the like, from that which is apparent in the rainbow, or the radiation of opal or the diamond;[101] death by drowning, from that by burning, the sword, apoplexy, or consumption; and yet they all agree in the common natures of heat, redness, and death), let him be assured that his understanding is inthralled by habit, by general appearances and hypotheses. For it is most certain that, however heterogeneous and distinct, they agree in the form or law which regulates heat, redness, or death; and that human power cannot be emancipated and freed from the common course of nature, and expanded and exalted to new efficients and new modes of operation, except by the revelation and invention of forms of this nature. But after this[102] union of nature, which is the principal point, we will afterward, in its proper place, treat of the divisions and ramifications of nature, whether ordinary or internal and more real.

XVIII. We must now offer an example of the exclusion or rejection of natures found by the tables of review, not to be of the form of heat; first premising that not only each table is sufficient for the rejection of any nature, but even each single instance contained in them. For it is clear from what has been said that every contradictory instance destroys a hypothesis as to the form. Still, however, for the sake of clearness, and in order to show more plainly the use of the tables, we redouble or repeat the exclusive.

An Example of the Exclusive Table, or of the Rejection of Natures from the Form of Heat

- 1. On account of the sun’s rays, reject elementary (or terrestrial) nature.
- 2. On account of common fire, and particularly subterranean fires (which are the most remote and secluded from the rays of the heavenly bodies), reject celestial nature.
- 3. On account of the heat acquired by every description of substances (as minerals, vegetables, the external parts of animals, water, oil, air, etc.) by mere approximation to the fire or any warm body, reject all variety and delicate texture of bodies.

- 4. On account of iron and ignited metals, which warm other bodies, and yet neither lose their weight nor substance, reject the imparting or mixing of the substance of the heating body.
- 5. On account of boiling water and air, and also those metals and other solid bodies which are heated, but not to ignition, or red heat, reject flame or light.
- 6. On account of the rays of the moon and other heavenly bodies (except the sun), again reject flame or light.
- 7. On account of the comparison between red-hot iron and the flame of spirits of wine (for the iron is more hot and less bright, while the flame of spirits of wine is more bright and less hot), again reject flame and light.
- 8. On account of gold and other ignited metals, which are of the greatest specific density, reject rarity.
- 9. On account of air, which is generally found to be cold and yet continues rare, reject rarity.
- 10. On account of ignited iron,[103] which does not swell in bulk, but retains the same apparent dimension, reject the absolute expansive motion of the whole.
- 11. On account of the expansion of the air in thermometers and the like, which is absolutely moved and expanded to the eye, and yet acquires no manifest increase of heat, again reject absolute or expansive motion of the whole.
- 12. On account of the ready application of heat to all substances without any destruction or remarkable alteration of them, reject destructive nature or the violent communication of any new nature.
- 13. On account of the agreement and conformity of the effects produced by cold and heat, reject both expansive and contracting motion as regards the whole.
- 14. On account of the heat excited by friction, reject principal nature, by which we mean that which exists positively, and is not

caused by a preceding nature.

There are other natures to be rejected; but we are merely offering examples, and not perfect tables.

None of the above natures are of the form of heat; and man is freed from them all in his operation upon heat.

XIX. In the exclusive table are laid the foundations of true induction, which is not, however, completed until the affirmative be attained. Nor is the exclusive table perfect, nor can it be so at first. For it is clearly a rejection of simple natures; but if we have not as yet good and just notions of simple natures, how can the exclusive table be made correct? Some of the above, as the notion of elementary and celestial nature, and rarity, are vague and ill defined. We, therefore, who are neither ignorant nor forgetful of the great work which we attempt, in rendering the human understanding adequate to things and nature, by no means rest satisfied with what we have hitherto enforced, but push the matter further, and contrive and prepare more powerful aid for the use of the understanding, which we will next subjoin. And, indeed, in the interpretation of nature the mind is to be so prepared and formed, as to rest itself on proper degrees of certainty, and yet to remember (especially at first) that what is present depends much upon what remains behind.

XX. Since, however, truth emerges more readily from error than confusion, we consider it useful to leave the understanding at liberty to exert itself and attempt the interpretation of nature in the affirmative, after having constructed and weighed the three tables of preparation, such as we have laid them down, both from the instances there collected, and others occurring elsewhere. Which attempt we are wont to call the liberty of the understanding, or the commencement of interpretation, or the first vintage.

The First Vintage of the Form of Heat

It must be observed that the form of anything is inherent (as appears clearly from our premises) in each individual instance in which the thing itself is inherent, or it would not be a form. No contradictory instance, therefore, can be alleged. The form, however, is found to be much more conspicuous and evident

in some instances than in others; in those (for example) where its nature is less restrained and embarrassed, and reduced to rule by other natures. Such instances we are wont to term coruscations, or conspicuous instances. We must proceed, then, to the first vintage of the form of heat.

From the instances taken collectively, as well as singly, the nature whose limit is heat appears to be motion. This is chiefly exhibited in flame, which is in constant motion, and in warm or boiling liquids, which are likewise in constant motion. It is also shown in the excitement or increase of heat by motion, as by bellows and draughts: for which see Inst. 29, Tab. 3, and by other species of motion, as in Inst. 28 and 31, Tab. 3. It is also shown by the extinction of fire and heat upon any strong pressure, which restrains and puts a stop to motion; for which see Inst. 30 and 32, Tab. 3. It is further shown by this circumstance, namely, that every substance is destroyed, or at least materially changed, by strong and powerful fire and heat: whence it is clear that tumult and confusion are occasioned by heat, together with a violent motion in the internal parts of bodies; and this gradually tends to their dissolution.

What we have said with regard to motion must be thus understood, when taken as the genus of heat: it must not be thought that heat generates motion, or motion heat (though in some respects this be true), but that the very essence of heat, or the substantial self[104] of heat, is motion and nothing else, limited, however, by certain differences which we will presently add, after giving some cautions for avoiding ambiguity.

Sensible heat is relative, and regards man, not universe; and is rightly held to be merely the effect of heat on animal spirit. It is even variable in itself, since the same body (in different states of sensation) excites the feeling of heat and of cold; this is shown by Inst. 41, Tab. 3.

Nor should we confound the communication of heat or its transitive nature, by which a body grows warm at the approach of a heated body, with the form of heat; for heat is one thing and heating another. Heat can be excited by friction without any previous heating body, and, therefore, heating is excluded from the form of heat. Even when heat is excited by the approach of a hot body, this

depends not on the form of heat, but on another more profound and common nature; namely, that of assimilation and multiplication, about which a separate inquiry must be made.

The notion of fire is vulgar, and of no assistance; it is merely compounded of the conjunction of heat and light in any body, as in ordinary flame and red-hot substances.

Laying aside all ambiguity, therefore, we must lastly consider the true differences which limit motion and render it the form of heat.

I. The first difference is, that heat is an expansive motion, by which the body strives to dilate itself, and to occupy a greater space than before. This difference is principally seen in flame, where the smoke or thick vapor is clearly dilated and bursts into flame.

It is also shown in all boiling liquids, which swell, rise, and boil up to the sight, and the process of expansion is urged forward till they are converted into a much more extended and dilated body than the liquid itself, such as steam, smoke, or air.

It is also shown in wood and combustibles where exudation sometimes takes place, and evaporation always.

It is also shown in the melting of metals, which, being very compact, do not easily swell and dilate, but yet their spirit, when dilated and desirous of further expansion, forces and urges its thicker parts into dissolution, and if the heat be pushed still further, reduces a considerable part of them into a volatile state.

It is also shown in iron or stones, which though not melted or dissolved, are however softened. The same circumstance takes place in sticks of wood, which become flexible when a little heated in warm ashes.

It is most readily observed in air, which instantly and manifestly expands with a small degree of heat, as in Inst. 38, Tab. 3.

It is also shown in the contrary nature of cold; for cold contracts and narrows every substance;[105] so that in intense frosts nails fall out of the wall and brass cracks, and heated glass exposed suddenly to the cold cracks and breaks. So the

air, by a slight degree of cold, contracts itself, as in Inst. 38, Tab. 3. More will be said of this in the inquiry into cold.

Nor is it to be wondered at if cold and heat exhibit many common effects (for which see Inst. 32, Tab. 2), since two differences, of which we shall presently speak, belong to each nature: although in the present difference the effects be diametrically opposed to each other. For heat occasions an expansive and dilating motion, but cold a contracting and condensing motion.

II. The second difference is a modification of the preceding, namely, that heat is an expansive motion, tending toward the exterior, but at the same time bearing the body upward. For there is no doubt that there be many compound motions, as an arrow or dart, for instance, has both a rotatory and progressive motion. In the same way the motion of heat is both expansive and tending upward.

This difference is shown by putting the tongs or poker into the fire. If placed perpendicularly with the hand above, they soon burn it, but much less speedily if the hand hold them sloping or from below.

It is also conspicuous in distillations *per descensum*, which men are wont to employ with delicate flowers, whose scent easily evaporates. Their industry has devised placing the fire above instead of below, that it may scorch less; for not only flame but all heat has an upward tendency.

Let an experiment be made on the contrary nature of cold, whether its contraction be downward, as the expansion of heat is upward. Take, therefore, two iron rods or two glass tubes, alike in other respects, and warm them a little, and place a sponge, dipped in cold water, or some snow, below the one and above the other. We are of opinion that the extremities will grow cold in that rod first where it is placed beneath, as the contrary takes place with regard to heat.

III. The third difference is this; that heat is not a uniform expansive motion of the whole, but of the small particles of the body; and this motion being at the same time restrained, repulsed, and reflected, becomes alternating, perpetually hurrying, striving, struggling, and irritated by the repercussion, which is the source of the violence of flame and heat.

But this difference is chiefly shown in flame and boiling liquids, which always hurry, swell, and subside again in detached parts.

It is also shown in bodies of such hard texture as not to swell or dilate in bulk, such as red-hot iron, in which the heat is most violent.

It is also shown by the fires burning most briskly in the coldest weather.

It is also shown by this, that when the air is dilated in the thermometer uniformly and equably, without any impediment or repulsion, the heat is not perceptible. In confined draughts also, although they break out very violently, no remarkable heat is perceived, because the motion affects the whole, without any alternating motion in the particles; for which reason try whether flame do not burn more at the sides than in its centre.

It is also shown in this, that all burning proceeds by the minute pores of bodies — undermining, penetrating, piercing, and pricking them as if with an infinite number of needle-points. Hence all strong acids (if adapted to the body on which they act) exhibit the effects of fire, from their corroding and pungent nature.

The difference of which we now speak is common also to the nature of cold, in which the contracting motion is restrained by the resistance of expansion, as in heat the expansive motion is restrained by the resistance of contraction.

Whether, therefore, the particles of matter penetrate inward or outward, the reasoning is the same, though the power be very different, because we have nothing on earth which is intensely cold.

IV. The fourth difference is a modification of the preceding, namely, that this stimulating or penetrating motion should be rapid and never sluggish, and should take place not in the very minutest particles, but rather in those of some tolerable dimensions.

It is shown by comparing the effects of fire with those of time. Time dries, consumes, undermines, and reduces to ashes as well as fire, and perhaps to a much finer degree; but as its motion is very slow, and attacks very minute particles, no heat is perceived.

It is also shown in a comparison of the dissolution of iron and gold; for gold is dissolved without the excitement of any heat, but iron with a vehement excitement of it, although most in the same time, because in the former the penetration of the separating acid is mild, and gently insinuates itself, and the particles of gold yield easily, but the penetration of iron is violent, and attended with some struggle, and its particles are more obstinate.

It is partially shown, also, in some gangrenes and mortifications of flesh, which do not excite great heat or pain, from the gentle nature of the putrefaction.

Let this suffice for a first vintage, or the commencement of the interpretation of the form of heat by the liberty of the understanding.

From this first vintage the form or true definition of heat (considered relatively to the universe and not to the sense) is briefly thus — Heat is an expansive motion restrained, and striving to exert itself in the smaller particles.[106] The expansion is modified by its tendency to rise, though expanding toward the exterior; and the effort is modified by its not being sluggish, but active and somewhat violent.

With regard to the operative definition, the matter is the same. If you are able to excite a dilating or expansive motion in any natural body, and so to repress that motion and force it on itself as not to allow the expansion to proceed equally, but only to be partially exerted and partially repressed, you will beyond all doubt produce heat, without any consideration as to whether the body be of earth (or elementary, as they term it), or imbued with celestial influence, luminous or opaque, rare or dense, locally expanded or contained within the bounds of its first dimensions, verging to dissolution or remaining fixed, animal, vegetable, or mineral, water, or oil, or air, or any other substance whatever susceptible of such motion. Sensible heat is the same, but considered relatively to the senses. Let us now proceed to further helps.

XXI. After our tables of first review, our rejection or exclusive table, and the first vintage derived from them, we must advance to the remaining helps of the understanding with regard to the interpretation of nature, and a true and perfect

induction, in offering which we will take the examples of cold and heat where tables are necessary, but where fewer instances are required we will go through a variety of others, so as neither to confound investigation nor to narrow our doctrine.

In the first place, therefore, we will treat of prerogative instances;[107] 2. Of the supports of induction; 3. Of the correction of induction; 4. Of varying the investigation according to the nature of the subject; 5. Of the prerogative natures with respect to investigation, or of what should be the first or last objects of our research; 6. Of the limits of investigation, or a synopsis of all natures that exist in the universe; 7. Of the application to practical purposes, or of what relates to man; 8. Of the preparations for investigation; 9. And lastly, of the ascending and descending scale of axioms.[108]

XXII. Among the prerogative instances we will first mention solitary instances. Solitary instances are those which exhibit the required nature in subjects that have nothing in common with any other subject than the nature in question, or which do not exhibit the required nature in subjects resembling others in every respect except that of the nature in question; for these instances manifestly remove prolixity, and accelerate and confirm exclusion, so that a few of them are of as much avail as many.

For instance, let the inquiry be the nature of color. Prisms, crystalline gems, which yield colors not only internally but on the wall, dews, etc., are solitary instances; for they have nothing in common with the fixed colors in flowers and colored gems, metals, woods, etc., except the color itself. Hence we easily deduce that color is nothing but a modification of the image of the incident and absorbed light, occasioned in the former case by the different degrees of incidence, in the latter by the various textures and forms of bodies.[109] These are solitary instances as regards similitude.

Again, in the same inquiry the distinct veins of white and black in marble, and the variegated colors of flowers of the same species, are solitary instances; for the black and white of marble, and the spots of white and purple in the flowers of the stock, agree in every respect but that of color. Thence we easily

deduce that color has not much to do with the intrinsic natures of any body, but depends only on the coarser and as it were mechanical arrangement of the parts. These are solitary instances as regards difference. We call them both solitary or wild, to borrow a word from the astronomers.

XXIII. In the second rank of prerogative instances we will consider migrating instances. In these the required nature passes toward generation, having no previous existence, or toward corruption, having first existed. In each of these divisions, therefore, the instances are always twofold, or rather it is one instance, first in motion or on its passage, and then brought to the opposite conclusion. These instances not only hasten and confirm exclusion, but also reduce affirmation, or the form itself, to a narrow compass; for the form must be something conferred by this migration, or, on the contrary, removed and destroyed by it; and although all exclusion advances affirmation, yet this takes place more directly in the same than in different subjects; but if the form (as it is quite clear from what has been advanced) exhibit itself in one subject, it leads to all. The more simple the migration is, the more valuable is the instance. These migrating instances are, moreover, very useful in practice, for since they manifest the form, coupled with that which causes or destroys it, they point out the right practice in some subjects, and thence there is an easy transition to those with which they are most allied. There is, however, a degree of danger which demands caution, namely, lest they should refer the form too much to its efficient cause, and imbue, or at least tinge, the understanding with a false notion of the form from the appearance of such cause, which is never more than a vehicle or conveyance of the form. This may easily be remedied by a proper application of exclusion.

Let us then give an example of a migrating instance. Let whiteness be the required nature. An instance which passes toward generation is glass in its entire and in its powdered state, or water in its natural state, and when agitated to froth; for glass when entire, and water in its natural state, are transparent and not white, but powdered glass and the froth of water are white and not transparent. We must inquire, therefore, what has happened to the glass or water in the course of

this migration; for it is manifest that the form of whiteness is conveyed and introduced by the bruising of the glass and the agitation of the water; but nothing is found to have been introduced but a diminishing of the parts of the glass and water and the insertion of air. Yet this is no slight progress toward discovering the form of whiteness, namely, that two bodies, in themselves more or less transparent (as air and water, or air and glass), when brought into contact in minute portions, exhibit whiteness from the unequal refraction of the rays of light.

But here we must also give an example of the danger and caution of which we spoke; for instance, it will readily occur to an understanding perverted by efficients, that air is always necessary for producing the form of whiteness, or that whiteness is only generated by transparent bodies, which suppositions are both false, and proved to be so by many exclusions; nay, it will rather appear (without any particular regard to air or the like), that all bodies which are even in such of their parts as affect the sight exhibit transparency, those which are uneven and of simple texture whiteness, those which are uneven and of compound but regular texture all the other colors except black, but those which are uneven and of a compound irregular and confused texture exhibit blackness. An example has been given, therefore, of an instance migrating toward generation in the required nature of whiteness. An instance migrating toward corruption in the same nature is that of dissolving froth or snow, for they lose their whiteness and assume the transparency of water in its pure state without air.

Nor should we by any means omit to state, that under migrating instances we must comprehend not only those which pass toward generation and destruction, but also those which pass toward increase or decrease, for they, too, assist in the discovery of the form, as is clear from our definition of a form and the Table of Degrees. Hence paper, which is white when dry, is less white when moistened (from the exclusion of air and admission of water), and tends more to transparency. The reason is the same as in the above instances.[110]

XXIV. In the third rank of prerogative instances we will class conspicuous instances, of which we spoke in our first vintage of the form of heat, and which

we are also wont to call coruscations, or free and predominant instances. They are such as show the required nature in its bare substantial shape, and at its height or greatest degree of power, emancipated and free from all impediments, or at least overcoming, suppressing, and restraining them by the strength of its qualities; for since every body is susceptible of many united forms of natures in the concrete, the consequence is that they mutually deaden, depress, break, and confine each other, and the individual forms are obscured. But there are some subjects in which the required nature exists in its full vigor rather than in others, either from the absence of any impediment, or the predominance of its quality. Such instances are eminently conspicuous. But even in these care must be taken, and the hastiness of the understanding checked, for whatever makes a show of the form, and forces it forward, is to be suspected, and recourse must be had to severe and diligent exclusion.

For example, let heat be the required nature. The thermometer is a conspicuous instance of the expansive motion, which (as has been observed) constitutes the chief part of the form of heat; for although flame clearly exhibits expansion, yet from its being extinguished every moment, it does not exhibit the progress of expansion. Boiling water again, from its rapid conversion into vapor, does not so well exhibit the expansion of water in its own shape, while red-hot iron and the like are so far from showing this progress, that, on the contrary, the expansion itself is scarcely evident to the senses, on account of its spirit being repressed and weakened by the compact and coarse particles which subdue and restrain it. But the thermometer strikingly exhibits the expansion of the air as being evident and progressive, durable and not transitory.[111]

Take another example. Let the required nature be weight. Quicksilver is a conspicuous instance of weight; for it is far heavier than any other substance except gold, which is not much heavier, and it is a better instance than gold for the purpose of indicating the form of weight; for gold is solid and consistent, which qualities must be referred to density, but quicksilver is liquid and teeming with spirit, yet much heavier than the diamond and other substances considered

to be most solid; whence it is shown that the form of gravity or weight predominates only in the quantity of matter, and not in the close fitting of it.[112]

XXV. In the fourth rank of prerogative instances we will class clandestine instances, which we are also wont to call twilight instances; they are as it were opposed to the conspicuous instances, for they show the required nature in its lowest state of efficacy, and as it were its cradle and first rudiments, making an effort and a sort of first attempt, but concealed and subdued by a contrary nature. Such instances are, however, of great importance in discovering forms, for as the conspicuous tend easily to differences, so do the clandestine best lead to genera, that is, to those common natures of which the required natures are only the limits.

As an example, let consistency, or that which confines itself, be the required nature, the opposite of which is a liquid or flowing state. The clandestine instances are such as exhibit some weak and low degree of consistency in fluids, as a water bubble, which is a sort of consistent and bounded pellicle formed out of the substance of the water. So eaves' droppings, if there be enough water to follow them, draw themselves out into a thin thread, not to break the continuity of the water, but if there be not enough to follow, the water forms itself into a round drop, which is the best form to prevent a breach of continuity; and at the moment the thread ceases, and the water begins to fall in drops, the thread of water recoils upward to avoid such a breach. Nay, in metals, which when melted are liquid but more tenacious, the melted drops often recoil and are suspended. There is something similar in the instance of the child's looking-glass, which little boys will sometimes form of spittle between rushes, and where the same pellicle of water is observable; and still more in that other amusement of children, when they take some water rendered a little more tenacious by soap, and inflate it with a pipe, forming the water into a sort of castle of bubbles, which assumes such consistency, by the interposition of the air, as to admit of being thrown some little distance without bursting. The best example is that of froth and snow, which assume such consistency as almost to admit of being cut, although composed of air and water, both liquids. All these circumstances

clearly show that the terms liquid and consistent are merely vulgar notions adapted to the sense, and that in reality all bodies have a tendency to avoid a breach of continuity, faint and weak in bodies composed of homogeneous parts (as is the case with liquids), but more vivid and powerful in those composed of heterogeneous parts, because the approach of heterogeneous matter binds bodies together, while the insinuation of homogeneous matter loosens and relaxes them.

Again, to take another example, let the required nature be attraction or the cohesion of bodies. The most remarkable conspicuous instance with regard to its form is the magnet. The contrary nature to attraction is non-attraction, though in a similar substance. Thus iron does not attract iron, lead lead, wood wood, nor water water. But the clandestine instance is that of the magnet armed with iron, or rather that of iron in the magnet so armed. For its nature is such that the magnet when armed does not attract iron more powerfully at any given distance than when unarmed; but if the iron be brought in contact with the armed magnet, the latter will sustain a much greater weight than the simple magnet, from the resemblance of substance in the two portions of iron, a quality altogether clandestine and hidden in the iron until the magnet was introduced. It is manifest, therefore, that the form of cohesion is something which is vivid and robust in the magnet, and hidden and weak in the iron. It is to be observed, also, that small wooden arrows without an iron point, when discharged from large mortars, penetrate further into wooden substances (such as the ribs of ships or the like), than the same arrows pointed with iron,[113] owing to the similarity of substance, though this quality was previously latent in the wood. Again, although in the mass air does not appear to attract air, nor water water, yet when one bubble is brought near another, they are both more readily dissolved, from the tendency to contact of the water with the water, and the air with the air.[114] These clandestine instances (which are, as has been observed, of the most important service) are principally to be observed in small portions of bodies, for the larger masses observe more universal and general forms, as will be mentioned in its proper place.[115]

XXVI. In the fifth rank of prerogative instances we will class constitutive instances, which we are wont also to call collective instances. They constitute a species or lesser form, as it were, of the required nature. For since the real forms (which are always convertible with the given nature) lie at some depth, and are not easily discovered, the necessity of the case and the infirmity of the human understanding require that the particular forms, which collect certain groups of instances (but by no means all) into some common notion, should not be neglected, but most diligently observed. For whatever unites nature, even imperfectly, opens the way to the discovery of the form. The instances, therefore, which are serviceable in this respect are of no mean power, but endowed with some degree of prerogative.

Here, nevertheless, great care must be taken that, after the discovery of several of these particular forms, and the establishing of certain partitions or divisions of the required nature derived from them, the human understanding do not at once rest satisfied, without preparing for the investigation of the great or leading form, and taking it for granted that nature is compound and divided from its very root, despise and reject any further union as a point of superfluous refinement, and tending to mere abstraction.

For instance, let the required nature be memory, or that which excites and assists memory. The constitutive instances are order or distribution, which manifestly assists memory: topics or commonplaces in artificial memory, which may be either places in their literal sense, as a gate, a corner, a window, and the like, or familiar persons and marks, or anything else (provided it be arranged in a determinate order), as animals, plants, and words, letters, characters, historical persons, and the like, of which, however, some are more convenient than others. All these commonplaces materially assist memory, and raise it far above its natural strength. Verse, too, is recollected and learned more easily than prose. From this group of three instances — order, the commonplaces of artificial memory, and verses — is constituted one species of aid for the memory,[116] which may be well termed a separation from infinity. For when a man strives to recollect or recall anything to memory, without a preconceived notion or

perception of the object of his search, he inquires about, and labors, and turns from point to point, as if involved in infinity. But if he have any preconceived notion, this infinity is separated off, and the range of his memory is brought within closer limits. In the three instances given above, the preconceived notion is clear and determined. In the first, it must be something that agrees with order; in the second, an image which has some relation or agreement with the fixed commonplaces; in the third, words which fall into a verse: and thus infinity is divided off. Other instances will offer another species, namely, that whatever brings the intellect into contact with something that strikes the sense (the principal point of artificial memory), assists the memory. Others again offer another species, namely, whatever excites an impression by any powerful passion, as fear, shame, wonder, delight, assists the memory. Other instances will afford another species: thus those impressions remain most fixed in the memory which are taken from the mind when clear and least occupied by preceding or succeeding notions, such as the things we learn in childhood, or imagine before sleep, and the first time of any circumstance happening. Other instances afford the following species: namely, that a multitude of circumstances or handles assist the memory, such as writing in paragraphs, reading aloud, or recitation. Lastly, other instances afford still another species: thus the things we anticipate, and which rouse our attention, are more easily remembered than transient events; as if you read any work twenty times over, you will not learn it by heart so readily as if you were to read it but ten times, trying each time to repeat it, and when your memory fails you looking into the book. There are, therefore, six lesser forms, as it were, of things which assist the memory: namely — 1, the separation of infinity; 2, the connection of the mind with the senses; 3, the impression in strong passion; 4, the impression on the mind when pure; 5, the multitude of handles; 6, anticipation.

Again, for example’s sake, let the required nature be taste or the power of tasting. The following instances are constitutive: 1. Those who do not smell, but are deprived by nature of that sense, do not perceive or distinguish rancid or putrid food by their taste, nor garlic from roses, and the like. 2. Again, those

whose nostrils are obstructed by accident (such as a cold) do not distinguish any putrid or rancid matter from anything sprinkled with rose-water. 3. If those who suffer from a cold blow their noses violently at the very moment in which they have anything fetid or perfumed in their mouth, or on their palate, they instantly have a clear perception of the fetor or perfume. These instances afford and constitute this species or division of taste, namely, that it is in part nothing else than an internal smelling, passing and descending through the upper passages of the nostrils to the mouth and palate. But, on the other hand, those whose power of smelling is deficient or obstructed, perceive what is salt, sweet, pungent, acid, rough, and bitter, and the like, as well as any one else: so that the taste is clearly something compounded of the internal smelling, and an exquisite species of touch which we will not here discuss.

Again, as another example, let the required nature be the communication of quality, without intermixture of substance. The instance of light will afford or constitute one species of communication, heat and the magnet another. For the communication of light is momentary and immediately arrested upon the removal of the original light. But heat, and the magnetic force, when once transmitted to or excited in another body, remain fixed for a considerable time after the removal of the source.

In fine, the prerogative of constitutive instances is considerable, for they materially assist the definitions (especially in detail) and the divisions or partitions of natures, concerning which Plato has well said, “He who can properly define and divide is to be considered a god.”[117]

XXVII. In the sixth rank of prerogative instances we will place similar or proportionate instances, which we are also wont to call physical parallels, or resemblances. They are such as exhibit the resemblances and connection of things, not in minor forms (as the constitutive do), but at once in the concrete. They are, therefore, as it were, the first and lowest steps toward the union of nature; nor do they immediately establish any axiom, but merely indicate and observe a certain relation of bodies to each other. But although they be not of

much assistance in discovering forms, yet they are of great advantage in disclosing the frame of parts of the universe, upon whose members they practice a species of anatomy, and thence occasionally lead us gently on to sublime and noble axioms, especially such as relate to the construction of the world, rather than to simple natures and forms.

As an example, take the following similar instances: a mirror and the eye; the formation of the ear, and places which return an echo. From such similarity, besides observing the resemblance (which is useful for many purposes), it is easy to collect and form this axiom. That the organs of the senses, and bodies which produce reflections to the senses, are of a similar nature. Again, the understanding once informed of this, rises easily to a higher and nobler axiom; namely, that the only distinction between sensitive and inanimate bodies, in those points in which they agree and sympathize, is this: in the former, animal spirit is added to the arrangement of the body, in the latter it is wanting. So that there might be as many senses in animals as there are points of agreement with inanimate bodies, if the animated body were perforated, so as to allow the spirit to have access to the limb properly disposed for action, as a fit organ. And, on the other hand, there are, without doubt, as many motions in an inanimate as there are senses in the animated body, though the animal spirit be absent. There must, however, be many more motions in inanimate bodies than senses in the animated, from the small number of organs of sense. A very plain example of this is afforded by pains. For, as animals are liable to many kinds and various descriptions of pains (such as those of burning, of intense cold, of pricking, squeezing, stretching, and the like), so is it most certain, that the same circumstances, as far as motion is concerned, happen to inanimate bodies, such as wood or stone when burned, frozen, pricked, cut, bent, bruised, and the like; although there be no sensation, owing to the absence of animal spirit.

Again, wonderful as it may appear, the roots and branches of trees are similar instances. For every vegetable swells and throws out its constituent parts toward the circumference, both upward and downward. And there is no difference between the roots and branches, except that the root is buried in the earth, and

the branches are exposed to the air and sun. For if one take a young and vigorous shoot, and bend it down to a small portion of loose earth, although it be not fixed to the ground, yet will it immediately produce a root, and not a branch. And, *vice versâ*, if earth be placed above, and so forced down with a stone or any hard substance, as to confine the plant and prevent its branching upward, it will throw out branches into the air downward.

The gums of trees, and most rock gems, are similar instances; for both of them are exudations and filtered juices, derived in the former instance from trees, in the latter from stones; the brightness and clearness of both arising from a delicate and accurate filtering. For nearly the same reason, the hair of animals is less beautiful and vivid in its color than the plumage of most birds, because the juices are less delicately filtered through the skin than through the quills.

The scrotum of males and matrix of females are also similar instances; so that the noble formation which constitutes the difference of the sexes appears to differ only as to the one being internal and the other external; a greater degree of heat causing the genitals to protrude in the male, while the heat of the female being too weak to effect this, they are retained internally.

The fins of fishes and the feet of quadrupeds, or the feet and wings of birds, are similar instances; to which Aristotle adds the four folds in the motion of serpents;[118] so that in the formation of the universe, the motion of animals appears to be chiefly effected by four joints or bendings.

The teeth of land animals, and the beaks of birds, are similar instances, whence it is clear, that in all perfect animals there is a determination of some hard substance toward the mouth.

Again, the resemblance and conformity of man to an inverted plant is not absurd. For the head is the root of the nerves and animal faculties, and the seminal parts are the lowest, not including the extremities of the legs and arms. But in the plant, the root (which resembles the head) is regularly placed in the lowest, and the seeds in the highest part.[119]

Lastly, we must particularly recommend and suggest, that man’s present industry in the investigation and compilation of natural history be entirely

changed, and directed to the reverse of the present system. For it has hitherto been active and curious in noting the variety of things, and explaining the accurate differences of animals, vegetables, and minerals, most of which are the mere sport of nature, rather than of any real utility as concerns the sciences. Pursuits of this nature are certainly agreeable, and sometimes of practical advantage, but contribute little or nothing to the thorough investigation of nature. Our labor must therefore be directed toward inquiring into and observing resemblances and analogies, both in the whole and its parts, for they unite nature, and lay the foundation of the sciences.

Here, however, a severe and rigorous caution must be observed, that we only consider as similar and proportionate instances, those which (as we first observed) point out physical resemblances; that is, real and substantial resemblances, deeply founded in nature, and not casual and superficial, much less superstitious or curious; such as those which are constantly put forward by the writers on natural magic (the most idle of men, and who are scarcely fit to be named in connection with such serious matters as we now treat of), who, with much vanity and folly, describe, and sometimes too, invent, unmeaning resemblances and sympathies.

But leaving such to themselves, similar instances are not to be neglected, in the greater portions of the world's conformation; such as Africa and the Peruvian continent, which reaches to the Straits of Magellan; both of which possess a similar isthmus and similar capes, a circumstance not to be attributed to mere accident.

Again, the New and Old World are both of them broad and expanded toward the north, and narrow and pointed toward the south.

Again, we have very remarkable similar instances in the intense cold, toward the middle regions (as it is termed) of the air, and the violent fires which are often found to burst from subterraneous spots, the similarity consisting in both being ends and extremes; the extreme of the nature of cold, for instance, is toward the boundary of heaven, and that of the nature of heat toward the centre of the earth, by a similar species of opposition or rejection of the contrary nature.

Lastly, in the axioms of the sciences, there is a similarity of instances worthy of observation. Thus the rhetorical trope which is called surprise, is similar to that of music termed the declining of a cadence. Again — the mathematical postulate, that things which are equal to the same are equal to one another, is similar to the form of the syllogism in logic, which unites things agreeing in the middle term.[120] Lastly, a certain degree of sagacity in collecting and searching for physical points of similarity, is very useful in many respects.[121]

XXVIII. In the seventh rank of prerogative instances, we will place singular instances, which we are also wont to call irregular or heteroclite (to borrow a term from the grammarians). They are such as exhibit bodies in the concrete, of an apparently extravagant and separate nature, agreeing but little with other things of the same species. For, while the similar instances resemble each other, those we now speak of are only like themselves. Their use is much the same with that of clandestine instances: they bring out and unite nature, and discover genera or common natures, which must afterward be limited by real differences. Nor should we desist from inquiry, until the properties and qualities of those things, which may be deemed miracles, as it were, of nature, be reduced to, and comprehended in, some form or certain law; so that all irregularity or singularity may be found to depend on some common form; and the miracle only consists in accurate differences, degree, and rare coincidence, not in the species itself. Man’s meditation proceeds no further at present, than just to consider things of this kind as the secrets and vast efforts of nature, without an assignable cause, and, as it were, exceptions to general rules.

As examples of singular instances, we have the sun and moon among the heavenly bodies; the magnet among minerals; quicksilver among metals; the elephant among quadrupeds; the venereal sensation among the different kinds of touch; the scent of sporting dogs among those of smell. The letter S, too, is considered by the grammarians as sui generis, from its easily uniting with double or triple consonants, which no other letter will. These instances are of great value, because they excite and keep alive inquiry, and correct an understanding depraved by habit and the common course of things.

XXIX. In the eighth rank of prerogative instances, we will place deviating instances, such as the errors of nature, or strange and monstrous objects, in which nature deviates and turns from her ordinary course. For the errors of nature differ from singular instances, inasmuch as the latter are the miracles of species, the former of individuals. Their use is much the same, for they rectify the understanding in opposition to habit, and reveal common forms. For with regard to these, also, we must not desist from inquiry, till we discern the cause of the deviation. The cause does not, however, in such cases rise to a regular form, but only to the latent process toward such a form. For he who is acquainted with the paths of nature, will more readily observe her deviations; and, *vice versâ*, he who has learned her deviations will be able more accurately to describe her paths.

They differ again from singular instances, by being much more apt for practice and the operative branch. For it would be very difficult to generate new species, but less so to vary known species, and thus produce many rare and unusual results.[122] The passage from the miracles of nature to those of art is easy; for if nature be once seized in her variations, and the cause be manifest, it will be easy to lead her by art to such deviation as she was at first led to by chance; and not only to that but others, since deviations on the one side lead and open the way to others in every direction. Of this we do not require any examples, since they are so abundant. For a compilation, or particular natural history, must be made of all monsters and prodigious births of nature; of everything, in short, which is new, rare and unusual in nature. This should be done with a rigorous selection, so as to be worthy of credit. Those are most to be suspected which depend upon superstition, as the prodigies of Livy, and those perhaps, but little less, which are found in the works of writers on natural magic, or even alchemy, and the like; for such men, as it were, are the very suitors and lovers of fables; but our instances should be derived from some grave and credible history, and faithful narration.

XXX. In the ninth rank of prerogative instances, we will place bordering instances, which we are also wont to term participants. They are such as exhibit

those species of bodies which appear to be composed of two species, or to be the rudiments between the one and the other. They may well be classed with the singular or heteroclite instances; for in the whole system of things, they are rare and extraordinary. Yet from their dignity, they must be treated of and classed separately, for they point out admirably the order and constitution of things, and suggest the causes of the number and quality of the more common species in the universe, leading the understanding from that which is, to that which is possible.

We have examples of them in moss, which is something between putrescence and a plant;[123] in some comets, which hold a place between stars and ignited meteors; in flying fishes, between fishes and birds; and in bats, between birds and quadrupeds.[124] Again,

Simia quam similis turpissima bestia nobis.

We have also biformed fœtus, mingled species and the like.

XXXI. In the tenth rank of prerogative instances, we will place the instances of power, or the fasces (to borrow a term from the insignia of empire), which we are also wont to call the wit or hands of man. These are such works as are most noble and perfect, and, as it were, the masterpieces in every art. For since our principal object is to make nature subservient to the state and wants of man, it becomes us well to note and enumerate the works, which have long since been in the power of man, especially those which are most polished and perfect: because the passage from these to new and hitherto undiscovered works, is more easy and feasible. For if any one, after an attentive contemplation of such works as are extant, be willing to push forward in his design with alacrity and vigor, he will undoubtedly either advance them, or turn them to something within their immediate reach, or even apply and transfer them to some more noble purpose.

Nor is this all: for as the understanding is elevated and raised by rare and unusual works of nature, to investigate and discover the forms which include them also, so is the same effect frequently produced by the excellent and wonderful works of art; and even to a greater degree, because the mode of effecting and constructing the miracles of art is generally plain, while that of

effecting the miracles of nature is more obscure. Great care, however, must be taken, that they do not depress the understanding, and fix it, as it were, to earth.

For there is some danger, lest the understanding should be astonished and chained down, and as it were bewitched, by such works of art, as appear to be the very summit and pinnacle of human industry, so as not to become familiar with them, but rather to suppose that nothing of the kind can be accomplished, unless the same means be employed, with perhaps a little more diligence, and more accurate preparation.

Now, on the contrary, it may be stated as a fact, that the ways and means hitherto discovered and observed, of effecting any matter or work, are for the most part of little value, and that all really efficient power depends, and is really to be deduced from the sources of forms, none of which have yet been discovered.

Thus (as we have before observed), had any one meditated on ballistic machines, and battering rams, as they were used by the ancients, whatever application he might have exerted, and though he might have consumed a whole life in the pursuit, yet would he never have hit upon the invention of flaming engines, acting by means of gunpowder; nor would any person, who had made woollen manufactories and cotton the subject of his observation and reflection, have ever discovered thereby the nature of the silkworm or of silk.

Hence all the most noble discoveries have (if you observe) come to light, not by any gradual improvement and extension of the arts, but merely by chance; while nothing imitates or anticipates chance (which is wont to act at intervals of ages) but the invention of forms.

There is no necessity for adducing any particular examples of these instances, since they are abundant. The plan to be pursued is this: all the mechanical, and even the liberal arts (as far as they are practical), should be visited and thoroughly examined, and thence there should be formed a compilation or particular history of the great masterpieces, or most finished works in each, as well as of the mode of carrying them into effect.

Nor do we confine the diligence to be used in such a compilation to the leading works and secrets only of every art, and such as excite wonder; for wonder is engendered by rarity, since that which is rare, although it be compounded of ordinary natures, always begets wonder.

On the contrary, that which is really wonderful, from some specific difference distinguishing it from other species, is carelessly observed, if it be but familiar. Yet the singular instances of art should be observed no less than those of nature, which we have before spoken of: and as in the latter we have classed the sun, the moon, the magnet, and the like, all of them most familiar to us, but yet in their nature singular, so should we proceed with the singular instances of art.

For example: paper, a very common substance, is a singular instance of art; for if you consider the subject attentively, you will find that artificial substances are either woven by straight and transverse lines, as silk, woollen, or linen cloth, and the like; or coagulated from concrete juices, such as brick, earthenware, glass, enamel, porcelain and the like, which admit of a polish if they be compact, but if not, become hard without being polished; all which latter substances are brittle, and not adherent or tenacious. On the contrary, paper is a tenacious substance, which can be cut and torn, so as to resemble and almost rival the skin of any animal, or the leaf of vegetables, and the like works of nature; being neither brittle like glass, nor woven like cloth, but having fibres and not distinct threads, just as natural substances, so that scarcely anything similar can be found among artificial substances, and it is absolutely singular. And in artificial works we should certainly prefer those which approach the nearest to an imitation of nature, or, on the other hand, powerfully govern and change her course.

Again, in these instances which we term the wit and hands of man, charms and conjuring should not be altogether despised, for although mere amusements, and of little use, yet they may afford considerable information.

Lastly, superstition and magic (in its common acceptation) are not to be entirely omitted; for although they be overwhelmed by a mass of lies and fables, yet some investigation should be made, to see if there be really any latent natural operation in them; as in fascination, and the fortifying of the imagination, the

sympathy of distant objects, the transmission of impressions from spirit to spirit no less than from body to body, and the like.

XXXII. From the foregoing remarks, it is clear that the last five species of instances (the similar, singular, deviating and bordering instances, and those of power) should not be reserved for the investigation of any given nature, as the preceding and many of the succeeding instances must, but a collection of them should be made at once, in the style of a particular history, so that they may arrange the matter which enters the understanding, and correct its depraved habit, for it is necessarily imbued, corrupted, perverted and distorted by daily and habitual impressions.

They are to be used, therefore, as a preparative, for the purpose of rectifying and purifying the understanding; for whatever withdraws it from habit, levels and planes down its surface for the reception of the dry and pure light of true notions.

These instances, moreover, level and prepare the way for the operative branch, as we will mention in its proper place when speaking of the practical deductions.

XXXIII. In the eleventh rank of prerogative instances we will place accompanying and hostile instances. These are such as exhibit any body or concrete, where the required nature is constantly found, as an inseparable companion, or, on the contrary, where the required nature is constantly avoided, and excluded from attendance, as an enemy. From these instances may be formed certain and universal propositions, either affirmative or negative; the subject of which will be the concrete body, and the predicate the required nature. For particular propositions are by no means fixed, when the required nature is found to fluctuate and change in the concrete, either approaching and acquired, or receding and laid aside. Hence particular propositions have no great prerogative, except in the case of migration, of which we have spoken above. Yet such particular propositions are of great use, when compared with the universal, as will be mentioned in its proper place. Nor do we require absolute

affirmation or negation, even in universal propositions, for if the exceptions be singular or rare, it is sufficient for our purpose.

The use of accompanying instances is to narrow the affirmative of form; for as it is narrowed by the migrating instances, where the form must necessarily be something communicated or destroyed by the act of migration, so it is narrowed by accompanying instances, where the form must necessarily be something which enters into the concretion of the body, or, on the contrary, is repugnant to it; and one who is well acquainted with the constitution or formation of the body, will not be far from bringing to light the form of the required nature.

For example: let the required nature be heat. Flame is an accompanying instance; for in water, air, stone, metal, and many other substances, heat is variable, and can approach or retire; but all flame is hot, so that heat always accompanies the concretion of flame. We have no hostile instance of heat; for the senses are unacquainted with the interior of the earth, and there is no concretion of any known body which is not susceptible of heat.

Again, let solidity be the required nature. Air is a hostile instance; for metals may be liquid or solid, so may glass; even water may become solid by congelation, but air cannot become solid or lose its fluidity.

With regard to these instances of fixed propositions, there are two points to be observed, which are of importance. First, that if there be no universal affirmative or negative, it be carefully noted as not existing. Thus, in heat, we have observed that there exists no universal negative, in such substances, at least, as have come to our knowledge. Again, if the required nature be eternity or incorruptibility, we have no universal affirmative within our sphere, for these qualities cannot be predicated of any bodies below the heavens, or above the interior of the earth. Secondly, to our general propositions as to any concrete, whether affirmative or negative, we should subjoin the concretes which appear to approach nearest to the non-existing substances; such as the most gentle or least-burning flames in heat, or gold in incorruptibility, since it approaches nearest to it. For they all

serve to show the limit of existence and non-existence, and circumscribe forms, so that they cannot wander beyond the conditions of matter.

XXXIV. In the twelfth rank of prerogative instances, we will class those subjunctive instances, of which we spoke in the last aphorism, and which we are also wont to call instances of extremity or limits; for they are not only serviceable when subjoined to fixed propositions, but also of themselves and from their own nature. They indicate with sufficient precision the real divisions of nature, and measures of things, and the "how far" nature effects or allows of anything, and her passage thence to something else. Such are gold in weight, iron in hardness, the whale in the size of animals, the dog in smell, the flame of gunpowder in rapid expansion, and others of a like nature. Nor are we to pass over the extremes in defect, as well as in abundance, as spirits of wine in weight, the touchstone in softness, the worms upon the skin in the size of animals, and the like.

XXXV. In the thirteenth rank of prerogative instances we will place those of alliance or union. They are such as mingle and unite natures held to be heterogeneous, and observed and marked as such in received classifications.

These instances show that the operation and effect, which is considered peculiar to some one of such heterogeneous natures, may also be attributed to another nature styled heterogeneous, so as to prove that the difference of the natures is not real nor essential, but a mere modification of a common nature. They are very serviceable, therefore, in elevating and carrying on the mind, from differences to genera, and in removing those phantoms and images of things, which meet it in disguise in concrete substances.

For example: let the required nature be heat. The classification of heat into three kinds, that of the celestial bodies, that of animals, and that of fire, appears to be settled and admitted; and these kinds of heat, especially one of them compared with the other two, are supposed to be different, and clearly heterogeneous in their essence and species, or specific nature, since the heat of the heavenly bodies and of animals generates and cherishes, while that of fire corrupts and destroys. We have an instance of alliance, then, in a very common

experiment, that of a vine branch admitted into a building where there is a constant fire, by which the grapes ripen a whole month sooner than in the air; so that fruit upon the tree can be ripened by fire, although this appear the peculiar effect of the sun. From this beginning, therefore, the understanding rejects all essential difference, and easily ascends to the investigation of the real differences between the heat of the sun and that of fire, by which their operation is rendered dissimilar, although they partake of a common nature.

These differences will be found to be four in number. 1. The heat of the sun is much milder and gentler in degree than that of fire. 2. It is much more moist in quality, especially as it is transmitted to us through the air. 3. Which is the chief point, it is very unequal, advancing and increased at one time, retiring and diminished at another, which mainly contributes to the generation of bodies. For Aristotle rightly asserted, that the principal cause of generation and corruption on the surface of the earth was the oblique path of the sun in the zodiac, whence its heat becomes very unequal, partly from the alternation of night and day, partly from the succession of summer and winter. Yet must he immediately corrupt and pervert his discovery, by dictating to nature according to his habit, and dogmatically assigning the cause of generation to the approach of the sun, and that of corruption to its retreat; while, in fact, each circumstance indifferently and not respectively contributes both to generation and corruption; for unequal heat tends to generate and corrupt, as equable heat does to preserve. 4. The fourth difference between the heat of the sun and fire is of great consequence; namely, that the sun, gradually, and for a length of time, insinuates its effects, while those of fire (urged by the impatience of man) are brought to a termination in a shorter space of time. But if any one were to pay attention to the tempering of fire, and reducing it to a more moderate and gentle degree (which may be done in various ways), and then were to sprinkle and mix a degree of humidity with it; and, above all, were to imitate the sun in its inequality; and, lastly, were patiently to suffer some delay (not such, however, as is proportioned to the effects of the sun, but more than men usually admit of in those of fire), he would soon banish the notion of any difference, and would attempt, or equal, or

perhaps sometimes surpass the effect of the sun, by the heat of fire. A like instance of alliance is that of reviving butterflies, benumbed and nearly dead from cold, by the gentle warmth of fire; so that fire is no less able to revive animals than to ripen vegetables. We may also mention the celebrated invention of Fracastorius, of applying a pan considerably heated to the head in desperate cases of apoplexy, which clearly expands the animal spirits, when compressed and almost extinguished by the humors and obstructions of the brain, and excites them to action, as the fire would operate on water or air, and in the result produces life. Eggs are sometimes hatched by the heat of fire, an exact imitation of animal heat; and there are many instances of the like nature, so that no one can doubt that the heat of fire, in many cases, can be modified till it resemble that of the heavenly bodies and of animals.

Again, let the required natures be motion and rest. There appears to be a settled classification, grounded on the deepest philosophy, that natural bodies either revolve, move in a straight line, or stand still and rest. For there is either motion without limit, or continuance within a certain limit, or a translation toward a certain limit. The eternal motion of revolution appears peculiar to the heavenly bodies, rest to this our globe, and the other bodies (heavy and light, as they are termed, that is to say, placed out of their natural position) are borne in a straight line to masses or aggregates which resemble them, the light toward the heaven, the heavy toward the earth; and all this is very fine language.

But we have an instance of alliance in low comets, which revolve, though far below the heavens; and the fiction of Aristotle, of the comet being fixed to, or necessarily following some star, has been long since exploded; not only because it is improbable in itself, but from the evident fact of the discursive and irregular motion of comets through various parts of the heavens.[125]

Another instance of alliance is that of the motion of air, which appears to revolve from east to west within the tropics, where the circles of revolution are the greatest.

The flow and ebb of the sea would perhaps be another instance, if the water were once found to have a motion of revolution, though slow and hardly

perceptible, from east to west, subject, however, to a reaction twice a day. If this be so, it is clear that the motion of revolution is not confined to the celestial bodies, but is shared, also, by air and water.

Again — the supposed peculiar disposition of light bodies to rise is rather shaken; and here we may find an instance of alliance in a water bubble. For if air be placed under water, it rises rapidly toward the surface by that striking motion (as Democritus terms it) with which the descending water strikes the air and raises it, not by any struggle or effort of the air itself; and when it has reached the surface of the water, it is prevented from ascending any further, by the slight resistance it meets with in the water, which does not allow an immediate separation of its parts, so that the tendency of the air to rise must be very slight.

Again, let the required nature be weight. It is certainly a received classification, that dense and solid bodies are borne toward the centre of the earth, and rare and light bodies to the circumference of the heavens, as their appropriate places. As far as relates to places (though these things have much weight in the schools), the notion of there being any determinate place is absurd and puerile. Philosophers trifle, therefore, when they tell you, that if the earth were perforated, heavy bodies would stop on their arrival at the centre. This centre would indeed be an efficacious nothing, or mathematical point, could it affect bodies or be sought by them, for a body is not acted upon except by a body.[126] In fact, this tendency to ascend and descend is either in the conformation of the moving body, or in its harmony and sympathy with another body. But if any dense and solid body be found, which does not, however, tend toward the earth, the classification is at an end. Now, if we allow of Gilbert's opinion, that the magnetic power of the earth, in attracting heavy bodies, is not extended beyond the limit of its peculiar virtue (which operates always at a fixed distance and no further),[127] and this be proved by some instance, such an instance will be one of alliance in our present subject. The nearest approach to it is that of waterspouts, frequently seen by persons navigating the Atlantic toward either of the Indies. For the force and mass of the water suddenly effused by waterspouts, appears to be so considerable, that the water must have been collected

previously, and have remained fixed where it was formed, until it was afterward forced down by some violent cause, rather than made to fall by the natural motion of gravity: so that it may be conjectured that a dense and compact mass, at a great distance from the earth, may be suspended as the earth itself is, and would not fall, unless forced down. We do not, however, affirm this as certain. In the meanwhile, both in this respect and many others, it will readily be seen how deficient we are in natural history, since we are forced to have recourse to suppositions for examples, instead of ascertained instances.

Again, let the required nature be the discursive power of the mind. The classification of human reason and animal instinct appears to be perfectly correct. Yet there are some instances of the actions of brutes which seem to show that they, too, can syllogize. Thus it is related, that a crow, which had nearly perished from thirst in a great drought, saw some water in the hollow trunk of a tree, but as it was too narrow for him to get into it, he continued to throw in pebbles, which made the water rise till he could drink; and it afterward became a proverb.

Again, let the required nature be vision. The classification appears real and certain, which considers light as that which is originally visible, and confers the power of seeing; and color, as being secondarily visible, and not capable of being seen without light, so as to appear a mere image or modification of light. Yet there are instances of alliance in each respect; as in snow when in great quantities, and in the flame of sulphur; the one being a color originally and in itself light, the other a light verging toward color.[128]

XXXVI. In the fourteenth rank of prerogative instances, we will place the instances of the cross, borrowing our metaphor from the crosses erected where two roads meet, to point out the different directions. We are wont also to call them decisive and judicial instances, and in some cases instances of the oracle and of command. Their nature is as follows: When in investigating any nature the understanding is, as it were, balanced, and uncertain to which of two or more natures the cause of the required nature should be assigned, on account of the frequent and usual concurrence of several natures, the instances of the cross

show that the union of one nature with the required nature is firm and indissoluble, while that of the other is unsteady and separable; by which means the question is decided, and the first is received as the cause, while the other is dismissed and rejected. Such instances, therefore, afford great light, and are of great weight, so that the course of interpretation sometimes terminates, and is completed in them. Sometimes, however, they are found among the instances already observed, but they are generally new, being expressly and purposely sought for and applied, and brought to light only by attentive and active diligence.

For example: let the required nature be the flow and ebb of the sea, which is repeated twice a day, at intervals of six hours between each advance and retreat, with some little difference, agreeing with the motion of the moon. We have here the following crossways:

This motion must be occasioned either by the advancing and the retiring of the sea, like water shaken in a basin, which leaves one side while it washes the other; or by the rising of the sea from the bottom, and its again subsiding, like boiling water. But a doubt arises, to which of these causes we should assign the flow and ebb. If the first assertion be admitted, it follows, that when there is a flood on one side, there must at the same time be an ebb on another, and the question therefore is reduced to this. Now Acosta, and some others, after a diligent inquiry, have observed that the flood tide takes place on the coast of Florida, and the opposite coasts of Spain and Africa, at the same time, as does also the ebb; and that there is not, on the contrary, a flood tide at Florida when there is an ebb on the coasts of Spain and Africa. Yet if one consider the subject attentively, this does not prove the necessity of a rising motion, nor refute the notion of a progressive motion. For the motion may be progressive, and yet inundate the opposite shores of a channel at the same time; as if the waters be forced and driven together from some other quarter, for instance, which takes place in rivers, for they flow and ebb toward each bank at the same time, yet their motion is clearly progressive, being that of the waters from the sea entering their mouths. So it may happen, that the waters coming in a vast body from the

eastern Indian Ocean are driven together, and forced into the channel of the Atlantic, and therefore inundate both coasts at once. We must inquire, therefore, if there be any other channel by which the waters can at the same time sink and ebb; and the Southern Ocean at once suggests itself, which is not less than the Atlantic, but rather broader and more extensive than is requisite for this effect.

We at length arrive, then, at an instance of the cross, which is this. If it be positively discovered, that when the flood sets in toward the opposite coasts of Florida and Spain in the Atlantic, there is at the same time a flood tide on the coasts of Peru and the back part of China, in the Southern Ocean, then assuredly, from this decisive instance, we must reject the assertion, that the flood and ebb of the sea, about which we inquire, takes place by progressive motion; for no other sea or place is left where there can be an ebb. But this may most easily be learned, by inquiring of the inhabitants of Panama and Lima (where the two oceans are separated by a narrow isthmus), whether the flood and ebb takes place on the opposite sides of the isthmus at the same time, or the reverse. This decision or rejection appears certain, if it be granted that the earth is fixed; but if the earth revolves, it may perhaps happen, that from the unequal revolution (as regards velocity) of the earth and the waters of the sea, there may be a violent forcing of the waters into a mass, forming the flood, and a subsequent relaxation of them (when they can no longer bear the accumulation), forming the ebb. A separate inquiry must be made into this. Even with this hypothesis, however, it remains equally true, that there must be an ebb somewhere, at the same time that there is a flood in another quarter.

Again, let the required nature be the latter of the two motions we have supposed; namely, that of a rising and subsiding motion, if it should happen that upon diligent examination the progressive motion be rejected. We have, then, three ways before us, with regard to this nature. The motion, by which the waters raise themselves, and again fall back, in the floods and ebbs, without the addition of any other water rolled toward them, must take place in one of the three following ways: Either the supply of water emanates from the interior of the earth, and returns back again; or there is really no greater quantity of water, but

the same water (without any augmentation of its quantity) is extended or rarefied, so as to occupy a greater space and dimension, and again contracts itself; or there is neither an additional supply nor any extension, but the same waters (with regard to quantity, density, or rarity) raise themselves and fall from sympathy, by some magnetic power attracting and calling them up, as it were, from above. Let us then (passing over the first two motions) reduce the investigation to the last, and inquire if there be any such elevation of the water by sympathy or a magnetic force; and it is evident, in the first place, that the whole mass of water being placed in the trench or cavity of the sea, cannot be raised at once, because there would not be enough to cover the bottom, so that if there be any tendency of this kind in the water to raise itself, yet it would be interrupted and checked by the cohesion of things, or (as the common expression is) that there may be no vacuum. The water, therefore, must rise on one side, and for that reason be diminished and ebb on another. But it will again necessarily follow that the magnetic power not being able to operate on the whole, operates most intensely on the centre, so as to raise the waters there, which, when thus raised successively, desert and abandon the sides.[129]

We at length arrive, then, at an instance of the cross, which is this: if it be found that during the ebb the surface of the waters at sea is more curved and round, from the waters rising in the middle, and sinking at the sides or coast, and if, during a flood, it be more even and level, from the waters returning to their former position, then assuredly, by this decisive instance, the raising of them by a magnetic force can be admitted; if otherwise, it must be entirely rejected. It is not difficult to make the experiment (by sounding in straits), whether the sea be deeper toward the middle in ebbs, than in floods. But it must be observed, if this be the case, that (contrary to common opinion) the waters rise in ebbs, and only return to their former position in floods, so as to bathe and inundate the coast.

Again, let the required nature be the spontaneous motion of revolution, and particularly, whether the diurnal motion, by which the sun and stars appear to us to rise and set, be a real motion of revolution in the heavenly bodies, or only apparent in them, and real in the earth. There may be an instance of the cross of

the following nature. If there be discovered any motion in the ocean from east to west, though very languid and weak, and if the same motion be discovered rather more swift in the air (particularly within the tropics, where it is more perceptible from the circles being greater). If it be discovered also in the low comets, and be already quick and powerful in them; if it be found also in the planets, but so tempered and regulated as to be slower in those nearest the earth, and quicker in those at the greatest distance, being quickest of all in the heavens, then the diurnal motion should certainly be considered as real in the heavens, and that of the earth must be rejected; for it will be evident that the motion from east to west is part of the system of the world and universal; since it is most rapid in the height of the heavens, and gradually grows weaker, till it stops and is extinguished in rest at the earth.

Again, let the required nature be that other motion of revolution, so celebrated among astronomers, which is contrary to the diurnal, namely, from west to east — and which the ancient astronomers assign to the planets, and even to the starry sphere, but Copernicus and his followers to the earth also — and let it be examined whether any such motion be found in nature, or it be rather a fiction and hypothesis for abridging and facilitating calculation, and for promoting that fine notion of effecting the heavenly motions by perfect circles; for there is nothing which proves such a motion in heavenly objects to be true and real, either in a planet's not returning in its diurnal motion to the same point of the starry sphere, or in the pole of the zodiac being different from that of the world, which two circumstances have occasioned this notion. For the first phenomenon is well accounted for by the spheres overtaking or falling behind each other, and the second by spiral lines; so that the inaccuracy of the return and declination to the tropics may be rather modifications of the one diurnal motion than contrary motions, or about different poles. And it is most certain, if we consider ourselves for a moment as part of the vulgar (setting aside the fictions of astronomers and the school, who are wont undeservedly to attack the senses in many respects, and to affect obscurity), that the apparent motion is such as we have said, a model of

which we have sometimes caused to be represented by wires in a sort of a machine.

We may take the following instances of the cross upon this subject. If it be found in any history worthy of credit, that there has existed any comet, high or low, which has not revolved in manifest harmony (however irregularly) with the diurnal motion, then we may decide so far as to allow such a motion to be possible in nature. But if nothing of the sort be found, it must be suspected, and recourse must be had to other instances of the cross.

Again, let the required nature be weight or gravity. Heavy and ponderous bodies must, either of their own nature, tend toward the centre of the earth by their peculiar formation, or must be attracted and hurried by the corporeal mass of the earth itself, as being an assemblage of similar bodies, and be drawn to it by sympathy. But if the latter be the cause, it follows that the nearer bodies approach to the earth, the more powerfully and rapidly they must be borne toward it, and the further they are distant, the more faintly and slowly (as is the case in magnetic attractions), and that this must happen within a given distance; so that if they be separated at such a distance from the earth that the power of the earth cannot act upon them, they will remain suspended like the earth, and not fall at all.[130]

The following instance of the cross may be adopted. Take a clock moved by leaden weights,[131] and another by a spring, and let them be set well together, so that one be neither quicker nor slower than the other; then let the clock moved by weights be placed on the top of a very high church, and the other be kept below, and let it be well observed, if the former move slower than it did, from the diminished power of the weights. Let the same experiment be made at the bottom of mines worked to a considerable depth, in order to see whether the clock move more quickly from the increased power of the weights. But if this power be found to diminish at a height, and to increase in subterraneous places, the attraction of the corporeal mass of the earth may be taken as the cause of weight.

Again, let the required nature be the polarity of the steel needle when touched with the magnet. We have these two ways with regard to this nature — Either the touch of the magnet must communicate polarity to the steel toward the north and south, or else it may only excite and prepare it, while the actual motion is occasioned by the presence of the earth, which Gilbert considers to be the case, and endeavors to prove with so much labor. The particulars he has inquired into with such ingenious zeal amount to this — 1. An iron bolt placed for a long time toward the north and south acquires polarity from this habit, without the touch of the magnet, as if the earth itself operating but weakly from its distance (for the surface or outer crust of the earth does not, in his opinion, possess the magnetic power), yet, by long continued motion, could supply the place of the magnet, excite the iron, and convert and change it when excited. 2. Iron, at a red or white heat, when quenched in a direction parallel to the north and south, also acquires polarity without the touch of the magnet, as if the parts of iron being put in motion by ignition, and afterward recovering themselves, were, at the moment of being quenched, more susceptible and sensitive of the power emanating from the earth, than at other times, and therefore as it were excited. But these points, though well observed, do not completely prove his assertion.

An instance of the cross on this point might be as follows: Let a small magnetic globe be taken, and its poles marked, and placed toward the east and west, not toward the north and south, and let it continue thus. Then let an untouched needle be placed over it, and suffered to remain so for six or seven days. Now, the needle (for this is not disputed), while it remains over the magnet, will leave the poles of the world and turn to those of the magnet, and therefore, as long as it remains in the above position, will turn to the east and west. But if the needle, when removed from the magnet and placed upon a pivot, be found immediately to turn to the north and south, or even by degrees to return thither, then the presence of the earth must be considered as the cause, but if it remains turned as at first, toward the east and west, or lose its polarity, then that cause must be suspected, and further inquiry made.

Again, let the required nature be the corporeal substance of the moon, whether it be rare, fiery, and aërial (as most of the ancient philosophers have thought), or solid and dense (as Gilbert and many of the moderns, with some of the ancients, hold).[132] The reasons for this latter opinion are grounded chiefly upon this, that the moon reflects the sun's rays, and that light does not appear capable of being reflected except by solids. The instances of the cross will therefore (if any) be such as to exhibit reflection by a rare body, such as flame, if it be but sufficiently dense. Now, certainly, one of the reasons of twilight is the reflection[133] of the rays of the sun by the upper part of the atmosphere. We see the sun's rays also reflected on fine evenings by streaks of moist clouds, with a splendor not less, but perhaps more bright and glorious than that reflected from the body of the moon, and yet it is not clear that those clouds have formed into a dense body of water. We see, also, that the dark air behind the windows at night reflects the light of a candle in the same manner as a dense body would do.[134] The experiment should also be made of causing the sun's rays to fall through a hole upon some dark and bluish flame. The unconfined rays of the sun, when falling on faint flames, do certainly appear to deaden them, and render them more like white smoke than flames. These are the only instances which occur at present of the nature of those of the cross, and better perhaps can be found. But it must always be observed that reflection is not to be expected from flame, unless it be of some depth, for otherwise it becomes nearly transparent. This at least may be considered certain, that light is always either received and transmitted or reflected by an even surface.

Again, let the required nature be the motion of projectiles (such as darts, arrows, and balls) through the air. The school, in its usual manner, treats this very carelessly, considering it enough to distinguish it by the name of violent motion, from that which they term natural, and as far as regards the first percussion or impulse, satisfies itself by its axiom, that two bodies cannot exist in one place, or there would be a penetration of dimensions. With regard to this nature we have these two crossways — The motion must arise either from the air carrying the projected body, and collecting behind it, like a stream behind boats,

or the wind behind straws; or from the parts of the body itself not supporting the impression, but pushing themselves forward in succession to ease it. Fracastorius, and nearly all those who have entered into any refined inquiry upon the subject, adopt the first. Nor can it be doubted that the air has some effect, yet the other motion is without doubt real, as is clear from a vast number of experiments. Among others we may take this instance of the cross, namely, that a thin plate or wire of iron rather stiff, or even a reed or pen split in two, when drawn up and bent between the finger and thumb, will leap forward; for it is clear that this cannot be attributed to the air's being collected behind the body, because the source of motion is in the centre of the plate or pen, and not in its extremities.

Again, let the required nature be the rapid and powerful motion of the explosion of gunpowder, by which such vast masses are upheaved, and such weights discharged as we observe in large mines and mortars, there are two crossways before us with regard to this nature. This motion is excited either by the mere effort of the body expanding itself when inflamed, or by the assisting effort of the crude spirit, which escapes rapidly from fire, and bursts violently from the surrounding flame as from a prison. The school, however, and common opinion only consider the first effort; for men think that they are great philosophers when they assert that flame, from the form of the element, is endowed with a kind of necessity of occupying a greater space than the same body had occupied when in the form of powder, and that thence proceeds the motion in question. In the meantime they do not observe, that although this may be true, on the supposition of flame being generated, yet the generation may be impeded by a weight of sufficient force to compress and suffocate it, so that no such necessity exists as they assert. They are right, indeed, in imagining that the expansion and the consequent emission or removal of the opposing body, is necessary if flame be once generated, but such a necessity is avoided if the solid opposing mass suppress the flame before it be generated; and we in fact see that flame, especially at the moment of its generation, is mild and gentle, and requires a hollow space where it can play and try its force. The great violence of

the effect, therefore, cannot be attributed to this cause; but the truth is, that the generation of these exploding flames and fiery blasts arises from the conflict of two bodies of a decidedly opposite nature — the one very inflammable, as is the sulphur, the other having an antipathy to flame, namely, the crude spirit of the nitre; so that an extraordinary conflict takes place while the sulphur is becoming inflamed as far as it can (for the third body, the willow charcoal, merely incorporates and conveniently unites the two others), and the spirit of nitre is escaping, as far also as it can, and at the same time expanding itself (for air, and all crude substances, and water are expanded by heat), fanning thus, in every direction, the flame of the sulphur by its escape and violence, just as if by invisible bellows.

Two kinds of instances of the cross might here be used — the one of very inflammable substances, such as sulphur and camphor, naphtha and the like, and their compounds, which take fire more readily and easily than gunpowder if left to themselves (and this shows that the effort to catch fire does not of itself produce such a prodigious effect); the other of substances which avoid and repel flame, such as all salts; for we see that when they are cast into the fire, the aqueous spirit escapes with a crackling noise before flame is produced, which also happens in a less degree in stiff leaves, from the escape of the aqueous part before the oily part has caught fire. This is more particularly observed in quicksilver, which is not improperly called mineral water, and which, without any inflammation, nearly equals the force of gunpowder by simple explosion and expansion, and is said, when mixed with gunpowder, to increase its force.

Again, let the required nature be the transitory nature of flame and its momentaneous extinction; for to us the nature of flame does not appear to be fixed or settled, but to be generated from moment to moment, and to be every instant extinguished; it being clear that those flames which continue and last, do not owe their continuance to the same mass of flame, but to a continued succession of new flame regularly generated, and that the same identical flame does not continue. This is easily shown by removing the food or source of the

flame, when it at once goes out. We have the two following crossways with regard to this nature:

This momentary nature either arises from the cessation of the cause which first produced it, as in light, sounds, and violent motions, as they are termed, or flame may be capable, by its own nature, of duration, but is subjected to some violence from the contrary natures which surround it, and is destroyed.

We may therefore adopt the following instance of the cross. We see to what a height the flames rise in great conflagrations; for as the base of the flame becomes more extensive, its vertex is more lofty. It appears, then, that the commencement of the extinction takes place at the sides, where the flame is compressed by the air, and is ill at ease; but the centre of the flame, which is untouched by the air and surrounded by flame, continues the same, and is not extinguished until compressed by degrees by the air attacking it from the sides. All flame, therefore, is pyramidal, having its base near the source, and its vertex pointed from its being resisted by the air, and not supplied from the source. On the contrary, the smoke, which is narrow at the base, expands in its ascent, and resembles an inverted pyramid, because the air admits the smoke, but compresses the flame; for let no one dream that the lighted flame is air, since they are clearly heterogeneous.

The instance of the cross will be more accurate, if the experiment can be made by flames of different colors. Take, therefore, a small metal sconce, and place a lighted taper in it, then put it in a basin, and pour a small quantity of spirits of wine round the sconce, so as not to reach its edge, and light the spirit. Now the flame of the spirit will be blue, and that of the taper yellow; observe, therefore, whether the latter (which can easily be distinguished from the former by its color, for flames do not mix immediately, as liquids do) continue pyramidal, or tend more to a globular figure, since there is nothing to destroy or compress it. If the latter result be observed, it must be considered as settled, that flame continues positively the same, while inclosed within another flame, and not exposed to the resisting force of the air.

Let this suffice for the instances of the cross. We have dwelt the longer upon them in order gradually to teach and accustom mankind to judge of nature by these instances, and enlightening experiments, and not by probable reasons.[135]

XXXVII. We will treat of the instances of divorce as the fifteenth of our prerogative instances. They indicate the separation of natures of the most common occurrence. They differ, however, from those subjoined to the accompanying instances; for the instances of divorce point out the separation of a particular nature from some concrete substance with which it is usually found in conjunction, while the hostile instances point out the total separation of one nature from another. They differ, also, from the instances of the cross, because they decide nothing, but only inform us that the one nature is capable of being separated from the other. They are of use in exposing false forms, and dissipating hasty theories derived from obvious facts; so that they add ballast and weight, as it were, to the understanding.

For instance, let the acquired natures be those four which Telesius terms associates, and of the same family, namely, heat, light, rarity, and mobility, or promptitude to motion; yet many instances of divorce can be discovered between them. Air is rare and easily moved, but neither hot nor light; the moon is light but not hot; boiling water is warm but not light; the motion of the needle in the compass is swift and active, and yet its substance is cold, dense, and opaque; and there are many similar examples.

Again, let the required natures be corporeal nature and natural action. The latter appears incapable of subsisting without some body, yet may we, perhaps, even here find an instance of divorce, as in the magnetic motion, which draws the iron to the magnet, and heavy bodies to the globe of the earth; to which we may add other actions which operate at a distance. For such action takes place in time, by distinct moments, not in an instant; and in space, by regular degrees and distances. There is, therefore, some one moment of time and some interval of space, in which the power or action is suspended between the two bodies creating the motion. Our consideration, then, is reduced to this, whether the

bodies which are the extremes of motion prepare or alter the intermediate bodies, so that the power advances from one extreme to the other by succession and actual contact, and in the meantime exists in some intermediate body; or whether there exists in reality nothing but the bodies, the power, and the space? In the case of the rays of light, sounds, and heat, and some other objects which operate at a distance, it is indeed probable that the intermediate bodies are prepared and altered, the more so because a qualified medium is required for their operation. But the magnetic or attractive power admits of an indifferent medium, and it is not impeded in any. But if that power or action is independent of the intermediate body, it follows that it is a natural power or action existing in a certain time and space without any body, since it exists neither in the extreme nor in the intermediate bodies. Hence the magnetic action may be taken as an instance of divorce of corporeal nature and natural action; to which we may add, as a corollary and an advantage not to be neglected, that it may be taken as a proof of essence and substance being separate and incorporeal, even by those who philosophize according to the senses. For if natural power and action emanating from a body can exist at any time and place entirely without any body, it is nearly a proof that it can also emanate originally from an incorporeal substance; for a corporeal nature appears to be no less necessary for supporting and conveying, than for exciting or generating natural action.

XXXVIII. Next follow five classes of instances which we are wont to call by the general term of instances of the lamp, or of immediate information. They are such as assist the senses; for since every interpretation of nature sets out from the senses, and leads, by a regular fixed and well-established road, from the perceptions of the senses to those of the understanding (which are true notions and axioms), it necessarily follows, that in proportion as the representatives or ministerings of the senses are more abundant and accurate, everything else must be more easy and successful.

The first of these five sets of instances of the lamp, strengthen, enlarge, and correct the immediate operations of the senses; the second reduce to the sphere

of the senses such matters as are beyond it; the third indicate the continued process or series of such things and motions, as for the most part are only observed in their termination, or in periods; the fourth supply the absolute wants of the senses; the fifth excite their attention and observation, and at the same time limit the subtilty of things. We will now proceed to speak of them singly.

XXXIX. In the sixteenth rank, then, of prerogative instances, we will place the instances of the door or gate, by which name we designate such as assist the immediate action of the senses. It is obvious, that sight holds the first rank among the senses, with regard to information, for which reason we must seek principally helps for that sense. These helps appear to be threefold, either to enable it to perceive objects not naturally seen, or to see them from a greater distance, or to see them more accurately and distinctly.

We have an example of the first (not to speak of spectacles and the like, which only correct and remove the infirmity of a deficient sight, and therefore give no further information) in the lately invented microscopes, which exhibit the latent and invisible minutiæ of substances, and their hidden formation and motion, by wonderfully increasing their apparent magnitude. By their assistance we behold with astonishment the accurate form and outline of a flea, moss, and animalculæ, as well as their previously invisible color and motion. It is said, also, that an apparently straight line, drawn with a pen or pencil, is discovered by such a microscope to be very uneven and curved, because neither the motion of the hand, when assisted by a ruler, nor the impression of ink or color, are really regular, although the irregularities are so minute as not to be perceptible without the assistance of the microscope. Men have (as is usual in new and wonderful discoveries) added a superstitious remark, that the microscope sheds a lustre on the works of nature, and dishonor on those of art, which only means that the tissue of nature is much more delicate than that of art. For the microscope is only of use for minute objects, and Democritus, perhaps, if he had seen it, would have exulted in the thought of a means being discovered for seeing his atom, which he affirmed to be entirely invisible. But the inadequacy of these microscopes, for the observation of any but the most minute bodies, and even of those if parts of a

larger body, destroys their utility; for if the invention could be extended to greater bodies, or the minute parts of greater bodies, so that a piece of cloth would appear like a net, and the latent minutiæ and irregularities of gems, liquids, urine, blood, wounds, and many other things could be rendered visible, the greatest advantage would, without doubt, be derived.

We have an instance of the second kind in the telescope, discovered by the wonderful exertions of Galileo; by the assistance of which a nearer intercourse may be opened (as by boats or vessels) between ourselves and the heavenly objects. For by its aid we are assured that the Milky Way is but a knot or constellation of small stars, clearly defined and separate, which the ancients only conjectured to be the case; whence it appears to be capable of demonstration, that the spaces of the planetary orbits (as they are termed) are not quite destitute of other stars, but that the heaven begins to glitter with stars before we arrive at the starry sphere, although they may be too small to be visible without the telescope. By the telescope, also, we can behold the revolutions of smaller stars round Jupiter, whence it may be conjectured that there are several centres of motion among the stars. By its assistance, also, the irregularity of light and shade on the moon's surface is more clearly observed and determined, so as to allow of a sort of selenography.[136] By the telescope we see the spots in the sun, and other similar phenomena; all of which are most noble discoveries, as far as credit can be safely given to demonstrations of this nature, which are on this account very suspicious, namely, that experiment stops at these few, and nothing further has yet been discovered by the same method, among objects equally worthy of consideration.

We have instances of the third kind in measuring-rods, astrolabes, and the like, which do not enlarge, but correct and guide the sight. If there be other instances which assist the other senses in their immediate and individual action, yet if they add nothing further to their information they are not apposite to our present purpose, and we have therefore said nothing of them.

XL. In the seventeenth rank of prerogative instances we will place citing instances (to borrow a term from the tribunals), because they cite those things to appear, which have not yet appeared. We are wont also to call them invoking instances, and their property is that of reducing to the sphere of the senses objects which do not immediately fall within it.

Objects escape the senses either from their distance, or the intervention of other bodies, or because they are not calculated to make an impression upon the senses, or because they are not in sufficient quantity to strike the senses, or because there is not sufficient time for their acting upon the senses, or because the impression is too violent, or because the senses are previously filled and possessed by the object, so as to leave no room for any new motion. These remarks apply principally to sight, and next to touch, which two senses act extensively in giving information, and that too upon general objects, while the remaining three inform us only, as it were, by their immediate action, and as to specific objects.

There can be no reduction to the sphere of the senses in the first case, unless in the place of the object, which cannot be perceived on account of the distance, there be added or substituted some other object, which can excite and strike the sense from a greater distance, as in the communication of intelligence by fires, bells, and the like.

In the second case we effect this reduction by rendering those things which are concealed by the interposition of other bodies, and which cannot easily be laid open, evident to the senses by means of that which lies at the surface, or proceeds from the interior; thus the state of the body is judged of by the pulse, urine, *etc.*

The third and fourth cases apply to many subjects, and the reduction to the sphere of the senses must be obtained from every quarter in the investigation of things. There are many examples. It is obvious that air, and spirit, and the like, whose whole substance is extremely rare and delicate, can neither be seen nor touched — a reduction, therefore, to the senses becomes necessary in every investigation relating to such bodies.

Let the required nature, therefore, be the action and motion of the spirit inclosed in tangible bodies; for every tangible body with which we are acquainted contains an invisible and intangible spirit, over which it is drawn, and which it seems to clothe. This spirit being emitted from a tangible substance, leaves the body contracted and dry; when retained, it softens and melts it; when neither wholly emitted nor retained, it models it, endows it with limbs, assimilates, manifests, organizes it, and the like. All these points are reduced to the sphere of the senses by manifest effects.

For in every tangible and inanimate body the inclosed spirit at first increases, and as it were feeds on the tangible parts which are most open and prepared for it; and when it has digested and modified them, and turned them into spirit, it escapes with them. This formation and increase of spirit is rendered sensible by the diminution of weight; for in every desiccation something is lost in quantity, not only of the spirit previously existing in the body, but of the body itself, which was previously tangible, and has been recently changed, for the spirit itself has no weight. The departure or emission of spirit is rendered sensible in the rust of metals, and other putrefactions of a like nature, which stop before they arrive at the rudiments of life, which belong to the third species of process.[137] In compact bodies the spirit does not find pores and passages for its escape, and is therefore obliged to force out, and drive before it, the tangible parts also, which consequently protrude, whence arises rust and the like. The contraction of the tangible parts, occasioned by the emission of part of the spirit (whence arises desiccation), is rendered sensible by the increased hardness of the substance, and still more by the fissures, contractions, shrivelling, and folds of the bodies thus produced. For the parts of wood split and contract, skins become shrivelled, and not only that, but, if the spirit be emitted suddenly by the heat of the fire, become so hastily contracted as to twist and roll themselves up.

On the contrary, when the spirit is retained, and yet expanded and excited by heat or the like (which happens in solid and tenacious bodies), then the bodies are softened, as in hot iron; or flow, as in metals; or melt, as in gums, wax, and the like. The contrary effects of heat, therefore (hardening some substances and

melting others), are easily reconciled,[138] because the spirit is emitted in the former, and agitated and retained in the latter; the latter action is that of heat and the spirit, the former that of the tangible parts themselves, after the spirit's emission.

But when the spirit is neither entirely retained nor emitted, but only strives and exercises itself, within its limits, and meets with tangible parts, which obey and readily follow it wherever it leads them, then follows the formation of an organic body, and of limbs, and the other vital actions of vegetables and animals. These are rendered sensible chiefly by diligent observation of the first beginnings, and rudiments or effects of life in animalculæ sprung from putrefaction, as in the eggs of ants, worms, mosses, frogs after rain, *etc.* Both a mild heat and a pliant substance, however, are necessary for the production of life, in order that the spirit may neither hastily escape, nor be restrained by the obstinacy of the parts, so as not to be able to bend and model them like wax.

Again, the difference of spirit which is important and of effect in many points (as unconnected spirit, branching spirit, branching and cellular spirit, the first of which is that of all inanimate substances, the second of vegetables, and the third of animals), is placed, as it were, before the eyes by many reducing instances.

Again, it is clear that the more refined tissue and conformation of things (though forming the whole body of visible or tangible objects) are neither visible nor tangible. Our information, therefore, must here also be derived from reduction to the sphere of the senses. But the most radical and primary difference of formation depends on the abundance or scarcity of matter within the same space or dimensions. For the other formations which regard the dissimilarity of the parts contained in the same body, and their collocation and position, are secondary in comparison with the former.

Let the required nature then be the expansion or coherence of matter in different bodies, or the quantity of matter relative to the dimensions of each. For there is nothing in nature more true than the twofold proposition — that nothing proceeds from nothing and that nothing is reduced to nothing, but that the quantum, or sum total of matter, is constant, and is neither increased nor

diminished. Nor is it less true, that out of this given quantity of matter, there is a greater or less quantity, contained within the same space or dimensions according to the difference of bodies; as, for instance, water contains more than air. So that if any one were to assert that a given content of water can be changed into an equal content of air, it is the same as if he were to assert that something can be reduced into nothing. On the contrary, if any one were to assert that a given content of air can be changed into an equal content of water, it is the same as if he were to assert that something can proceed from nothing. From this abundance or scarcity of matter are properly derived the notions of density and rarity, which are taken in various and promiscuous senses.

This third assertion may be considered as being also sufficiently certain; namely, that the greater or less quantity of matter in this or that body, may, by comparison, be reduced to calculation, and exact, or nearly exact, proportion. Thus, if one should say that there is such an accumulation of matter in a given quantity of gold, that it would require twenty-one times the quantity in dimension of spirits of wine, to make up the same quantity of matter, it would not be far from the truth.

The accumulation of matter, however, and its relative quantity, are rendered sensible by weight; for weight is proportionate to the quantity of matter, as regards the parts of a tangible substance, but spirit and its quantity of matter are not to be computed by weight, which spirit rather diminishes than augments.

We have made a tolerably accurate table of weight, in which we have selected the weights and size of all the metals, the principal minerals, stones, liquids, oils, and many other natural and artificial bodies: a very useful proceeding both as regards theory and practice, and which is capable of revealing many unexpected results. Nor is this of little consequence, that it serves to demonstrate that the whole range of the variety of tangible bodies with which we are acquainted (we mean tolerably close, and not spongy, hollow bodies, which are for a considerable part filled with air), does not exceed the ratio of one to twenty-one. So limited is nature, or at least that part of it to which we are most habituated.

We have also thought it deserving our industry, to try if we could arrive at the ratio of intangible or pneumatic bodies to tangible bodies, which we attempted by the following contrivance. We took a vial capable of containing about an ounce, using a small vessel in order to effect the subsequent evaporation with less heat. We filled this vial, almost to the neck, with spirits of wine, selecting it as the tangible body which, by our table, was the rarest, and contained a less quantity of matter in a given space than all other tangible bodies which are compact and not hollow. Then we noted exactly the weight of the liquid and vial. We next took a bladder, containing about two pints, and squeezed all the air out of it, as completely as possible, and until the sides of the bladder met. We first, however, rubbed the bladder gently with oil, so as to make it air-tight, by closing its pores with the oil. We tied the bladder tightly round the mouth of the vial, which we had inserted in it, and with a piece of waxed thread to make it fit better and more tightly, and then placed the vial on some hot coals in a brazier. The vapor or steam of the spirit, dilated and become aëriform by the heat, gradually swelled out the bladder, and stretched it in every direction like a sail. As soon as that was accomplished, we removed the vial from the fire and placed it on a carpet, that it might not be cracked by the cold; we also pricked the bladder immediately, that the steam might not return to a liquid state by the cessation of heat, and confound the proportions. We then removed the bladder, and again took the weight of the spirit which remained; and so calculated the quantity which had been converted into vapor, or an aëriform shape, and then examined how much space had been occupied by the body in its form of spirits of wine in the vial, and how much, on the other hand, had been occupied by it in its aëriform shape in the bladder, and subtracted the results; from which it was clear that the body, thus converted and changed, acquired an expansion of one hundred times beyond its former bulk.

Again, let the required nature be heat or cold, of such a degree as not to be sensible from its weakness. They are rendered sensible by the thermometer, as we described it above;[139] for the cold and heat are not actually perceived by the touch, but heat expands and cold contracts the air. Nor, again, is that expansion

or contraction of the air in itself visible, but the air when expanded depresses the water, and when contracted raises it, which is the first reduction to sight.

Again, let the required nature be the mixture of bodies; namely, how much aqueous, oleaginous or spirituous, ashy or salt parts they contain; or, as a particular example, how much butter, cheese, and whey there is in milk, and the like. These things are rendered sensible by artificial and skilful separations in tangible substances; and the nature of the spirit in them, though not immediately perceptible, is nevertheless discovered by the various motions and efforts of bodies. And, indeed, in this branch men have labored hard in distillations and artificial separations, but with little more success than in their other experiments now in use; their methods being mere guesses and blind attempts, and more industrious than intelligent; and what is worst of all, without any imitation or rivalry of nature, but rather by violent heats and too energetic agents, to the destruction of any delicate conformation, in which principally consist the hidden virtues and sympathies. Nor do men in these separations ever attend to or observe what we have before pointed out; namely, that in attacking bodies by fire, or other methods, many qualities are superinduced by the fire itself, and the other bodies used to effect the separation, which were not originally in the compound. Hence arise most extraordinary fallacies; for the mass of vapor which is emitted from water by fire, for instance, did not exist as vapor or air in the water, but is chiefly created by the expansion of the water by the heat of the fire.

So, in general, all delicate experiments on natural or artificial bodies, by which the genuine are distinguished from the adulterated, and the better from the more common, should be referred to this division; for they bring that which is not the object of the senses within their sphere. They are therefore to be everywhere diligently sought after.

With regard to the fifth cause of objects escaping our senses, it is clear that the action of the sense takes place by motion, and this motion is time. If, therefore, the motion of any body be either so slow or so swift as not to be proportioned to the necessary momentum which operates on the senses, the

object is not perceived at all; as in the motion of the hour hand, and that, again, of a musket-ball. The motion which is imperceptible by the senses from its slowness, is readily and usually rendered sensible by the accumulation of motion; that which is imperceptible from its velocity, has not as yet been well measured; it is necessary, however, that this should be done in some cases, with a view to a proper investigation of nature.

The sixth case, where the sense is impeded by the power of the object, admits of a reduction to the sensible sphere, either by removing the object to a greater distance, or by deadening its effects by the interposition of a medium, which may weaken and not destroy the object; or by the admission of its reflection where the direct impression is too strong, as that of the sun in a basin of water.

The seventh case, where the senses are so overcharged with the object as to leave no further room, scarcely occurs except in the smell or taste, and is not of much consequence as regards our present subject. Let what we have said, therefore, suffice with regard to the reduction to the sensible sphere of objects not naturally within its compass.

Sometimes, however, this reduction is not extended to the senses of man, but to those of some other animal, whose senses, in some points, exceed those of man; as (with regard to some scents) to that of the dog, and with regard to light existing imperceptibly in the air, when not illuminated from any extraneous source, to the sense of the cat, the owl, and other animals which see by night. For Telesius has well observed, that there appears to be an original portion of light even in the air itself,[140] although but slight and meagre, and of no use for the most part to the eyes of men, and those of the generality of animals; because those animals to whose senses this light is proportioned can see by night, which does not, in all probability, proceed from their seeing either without light or by any internal light.

Here, too, we would observe, that we at present discuss only the wants of the senses, and their remedies; for their deceptions must be referred to the inquiries appropriated to the senses, and sensible objects; except that important deception, which makes them define objects in their relation to man, and not in their

relation to the universe, and which is only corrected by universal reasoning and philosophy.[141]

XLI. In the eighteenth rank of prerogative instances we will class the instances of the road, which we are also wont to call itinerant and jointed instances. They are such as indicate the gradually continued motions of nature. This species of instances escapes rather our observation than our senses; for men are wonderfully indolent upon this subject, consulting nature in a desultory manner, and at periodic intervals, when bodies have been regularly finished and completed, and not during her work. But if any one were desirous of examining and contemplating the talents and industry of an artificer, he would not merely wish to see the rude materials of his art, and then his work when finished, but rather to be present while he is at labor, and proceeding with his work. Something of the same kind should be done with regard to nature. For instance, if any one investigate the vegetation of plants, he should observe from the first sowing of any seed (which can easily be done, by pulling up every day seeds which have been two, three, or four days in the ground, and examining them diligently), how and when the seed begins to swell and break, and be filled, as it were, with spirit; then how it begins to burst the bark and push out fibres, raising itself a little at the same time, unless the ground be very stiff; then how it pushes out these fibres, some downward for roots, others upward for the stem, sometimes also creeping laterally, if it find the earth open and more yielding on one side, and the like. The same should be done in observing the hatching of eggs, where we may easily see the process of animation and organization, and what parts are formed of the yolk, and what of the white of the egg, and the like. The same may be said of the inquiry into the formation of animals from putrefaction; for it would not be so humane to inquire into perfect and terrestrial animals, by cutting the fœtus from the womb; but opportunities may perhaps be offered of abortions, animals killed in hunting, and the like. Nature, therefore, must, as it were, be watched, as being more easily observed by night than by day: for contemplations of this kind may be considered as carried on by night, from the minuteness and perpetual burning of our watch-light.

The same must be attempted with inanimate objects, which we have ourselves done by inquiring into the opening of liquids by fire. For the mode in which water expands is different from that observed in wine, vinegar, or verjuice, and very different, again, from that observed in milk and oil, and the like; and this was easily seen by boiling them with slow heat, in a glass vessel, through which the whole may be clearly perceived. But we merely mention this, intending to treat of it more at large and more closely when we come to the discovery of the latent process; for it should always be remembered that we do not here treat of things themselves, but merely propose examples.[142]

XLII. In the nineteenth rank of prerogative instances we will class supplementary or substitutive instances, which we are also wont to call instances of refuge. They are such as supply information, where the senses are entirely deficient, and we therefore have recourse to them when appropriate instances cannot be obtained. This substitution is twofold, either by approximation or by analogy. For instance, there is no known medium which entirely prevents the effect of the magnet in attracting iron — neither gold, nor silver, nor stone, nor glass, wood, water, oil, cloth, or fibrous bodies, air, flame, or the like. Yet by accurate experiment, a medium may perhaps be found which would deaden its effect, more than another comparatively and in degree; as, for instance, the magnet would not perhaps attract iron through the same thickness of gold as of air, or the same quantity of ignited as of cold silver, and so on; for we have not ourselves made the experiment, but it will suffice as an example. Again, there is no known body which is not susceptible of heat, when brought near the fire; yet air becomes warm much sooner than stone. These are examples of substitution by approximation.

Substitution by analogy is useful, but less sure, and therefore to be adopted with some judgment. It serves to reduce that which is not the object of the senses to their sphere, not by the perceptible operations of the imperceptible body, but by the consideration of some similar perceptible body. For instance, let the subject for inquiry be the mixture of spirits, which are invisible bodies. There appears to be some relation between bodies and their sources or support. Now,

the source of flame seems to be oil and fat; that of air, water, and watery substances; for flame increases over the exhalation of oil, and air over that of water. One must therefore consider the mixture of oil and water, which is manifest to the senses, since that of air and flame in general escapes the senses. But oil and water mix very imperfectly by composition or stirring, while they are exactly and nicely mixed in herbs, blood, and the parts of animals. Something similar, therefore, may take place in the mixture of flame and air in spirituous substances, not bearing mixture very well by simple collision, while they appear, however, to be well mixed in the spirits of plants and animals.

Again, if the inquiry do not relate to perfect mixtures of spirits, but merely to their composition, as whether they easily incorporate with each other, or there be rather (as an example) certain winds and exhalations, or other spiritual bodies, which do not mix with common air, but only adhere to and float in it in globules and drops, and are rather broken and pounded by the air, than received into, and incorporated with it; this cannot be perceived in common air, and other aëriform substances, on account of the rarity of the bodies, but an image, as it were, of this process may be conceived in such liquids as quicksilver, oil, water, and even air, when broken and dissipated it ascends in small portions through water, and also in the thicker kinds of smoke; lastly, in dust, raised and remaining in the air, in all of which there is no incorporation: and the above representation in this respect is not a bad one, if it be first diligently investigated, whether there can be such a difference of nature between spirituous substances, as between liquids, for then these images might conveniently be substituted by analogy.

And although we have observed of these supplementary instances, that information is to be derived from them, when appropriate instances are wanting, by way of refuge, yet we would have it understood, that they are also of great use, when the appropriate instances are at hand, in order to confirm the information afforded by them; of which we will speak more at length, when our subject leads us, in due course, to the support of induction.

XLIII. In the twentieth rank of prerogative instances we will place lancing instances, which we are also wont (but for a different reason) to call twitching instances. We adopt the latter name, because they twitch the understanding, and the former because they pierce nature, whence we style them occasionally the instances of Democritus.[143] They are such as warn the understanding of the admirable and exquisite subtilty of nature, so that it becomes roused and awakened to attention, observation, and proper inquiry; as, for instance, that a little drop of ink should be drawn out into so many letters; that silver merely gilt on its surface should be stretched to such a length of gilt wire; that a little worm, such as you may find on the skin, should possess both a spirit and a varied conformation of its parts; that a little saffron should imbue a whole tub of water with its color; that a little musk or aroma should imbue a much greater extent of air with its perfume; that a cloud of smoke should be raised by a little incense; that such accurate differences of sounds as articulate words should be conveyed in all directions through the air, and even penetrate the pores of wood and water (though they become much weakened), that they should be, moreover, reflected, and that with such distinctness and velocity; that light and color should for such an extent and so rapidly pass through solid bodies, such as glass and water, with so great and so exquisite a variety of images, and should be refracted and reflected; that the magnet should attract through every description of body, even the most compact; but (what is still more wonderful) that in all these cases the action of one should not impede that of another in a common medium, such as air; and that there should be borne through the air, at the same time, so many images of visible objects, so many impulses of articulation, so many different perfumes, as of the violet, rose, etc., besides cold and heat, and magnetic attractions; all of them, I say, at once, without any impediment from each other, as if each had its paths and peculiar passage set apart for it, without infringing against or meeting each other.

To these lancing instances, however, we are wont, not without some advantage, to add those which we call the limits of such instances. Thus, in the cases we have pointed out, one action does not disturb or impede another of a

different nature, yet those of a similar nature subdue and extinguish each other; as the light of the sun does that of the candle, the sound of a cannon that of the voice, a strong perfume a more delicate one, a powerful heat a more gentle one, a plate of iron between the magnet and other iron the effect of the magnet. But the proper place for mentioning these will be also among the supports of induction.

XLIV. We have now spoken of the instances which assist the senses, and which are principally of service as regards information; for information begins from the senses. But our whole labor terminates in practice, and as the former is the beginning, so is the latter the end of our subject. The following instances, therefore, will be those which are chiefly useful in practice. They are comprehended in two classes, and are seven in number. We call them all by the general name of practical instances. Now there are two defects in practice, and as many divisions of important instances. Practice is either deceptive or too laborious. It is generally deceptive (especially after a diligent examination of natures), on account of the power and actions of bodies being ill defined and determined. Now the powers and actions of bodies are defined and determined either by space or by time, or by the quantity at a given period, or by the predominance of energy; and if these four circumstances be not well and diligently considered, the sciences may indeed be beautiful in theory, but are of no effect in practice. We call the four instances referred to this class, mathematical instances and instances of measure.

Practice is laborious either from the multitude of instruments, or the bulk of matter and substances requisite for any given work. Those instances, therefore, are valuable, which either direct practice to that which is of most consequence to mankind, or lessen the number of instruments or of matter to be worked upon. We assign to the three instances relating to this class, the common name of propitious or benevolent instances. We will now separately discuss these seven instances, and conclude with them that part of our work which relates to the prerogative or illustrious instances.

XLV. In the twenty-first rank of prerogative instances we will place the instances of the rod or rule, which we are also wont to call the instances of completion or *non ultrà*. For the powers and motions of bodies do not act and take effect through indefinite and accidental, but through limited and certain spaces; and it is of great importance to practice that these should be understood and noted in every nature which is investigated, not only to prevent deception, but to render practice more extensive and efficient. For it is sometimes possible to extend these powers, and bring the distance, as it were, nearer, as in the example of telescopes.

Many powers act and take effect only by actual touch, as in the percussion of bodies, where the one does not remove the other, unless the impelling touch the impelled body. External applications in medicine, as ointment and plasters, do not exercise their efficacy except when in contact with the body. Lastly, the objects of touch and taste only strike those senses when in contact with their organs.

Other powers act at a distance, though it be very small, of which but few have as yet been noted, although there be more than men suspect; this happens (to take everyday instances) when amber or jet attracts straws, bubbles dissolve bubbles, some purgative medicines draw humors from above, and the like. The magnetic power by which iron and the magnet, or two magnets, are attracted together, acts within a definite and narrow sphere, but if there be any magnetic power emanating from the earth a little below its surface, and affecting the needle in its polarity, it must act at a great distance.

Again, if there be any magnetic force which acts by sympathy between the globe of the earth and heavy bodies, or between that of the moon and the waters of the sea (as seems most probable from the particular floods and ebbs which occur twice in the month), or between the starry sphere and the planets, by which they are summoned and raised to their apogees, these must all operate at very great distances.[144]

Again, some conflagrations and the kindling of flames take place at very considerable distances with particular substances, as they report of the naphtha of Babylon. Heat, too, insinuates itself at wide distances, as does also cold, so that the masses of ice which are broken off and float upon the Northern Ocean, and are borne through the Atlantic to the coast of Canada, become perceptible by the inhabitants, and strike them with cold from a distance. Perfumes also (though here there appears to be always some corporeal emission) act at remarkable distances, as is experienced by persons sailing by the coast of Florida, or parts of Spain, where there are whole woods of lemons, oranges, and other odoriferous plants, or rosemary and marjoram bushes, and the like. Lastly, the rays of light and the impressions of sound act at extensive distances.

Yet all these powers, whether acting at a small or great distance, certainly act within definite distances, which are well ascertained by nature, so that there is a limit depending either on the mass or quantity of the bodies, the vigor or faintness of the powers, or the favorable or impeding nature of the medium, all of which should be taken into account and observed. We must also note the boundaries of violent motions, such as missiles, projectiles, wheels and the like, since they are also manifestly confined to certain limits.

Some motions and virtues are to be found of a directly contrary nature to these, which act in contact but not at a distance; namely, such as operate at a distance and not in contact, and again act with less force at a less distance, and the reverse. Sight, for instance, is not easily effective in contact, but requires a medium and distance; although I remember having heard from a person deserving of credit, that in being cured of a cataract (which was done by putting a small silver needle within the first coat of the eye, to remove the thin pellicle of the cataract, and force it into a corner of the eye), he had distinctly seen the needle moving across the pupil. Still, though this may be true, it is clear that large bodies cannot be seen well or distinctly, unless at the vertex of a cone, where the rays from the object meet at some distance from the eye. In old persons the eye sees better if the object be moved a little further, and not nearer. Again, it is certain that in projectiles the impact is not so violent at too short a

distance as a little afterward.[145] Such are the observations to be made on the measure of motions as regards distance.

There is another measure of motion in space which must not be passed over, not relating to progressive but spherical motion — that is, the expansion of bodies into a greater, or their contraction into a lesser sphere. For in our measure of this motion we must inquire what degree of compression or extension bodies easily and readily admit of, according to their nature, and at what point they begin to resist it, so as at last to bear it no further — as when an inflated bladder is compressed, it allows a certain compression of the air, but if this be increased, the air does not suffer it, and the bladder is burst.

We have proved this by a more delicate experiment. We took a metal bell, of a light and thin sort, such as is used for salt-cellars, and immersed it in a basin of water, so as to carry the air contained in its interior down with it to the bottom of the basin. We had first, however, placed a small globe at the bottom of the basin, over which we placed the bell. The result was, that if the globe were small compared with the interior of the bell, the air would contract itself, and be compressed without being forced out, but if it were too large for the air readily to yield to it, the latter became impatient of the pressure, raised the bell partly up, and ascended in bubbles.

To prove, also, the extension (as well as the compression) which air admits of, we adopted the following method: — We took a glass egg, with a small hole at one end; we drew out the air by violent suction at this hole, and then closed the hole with the finger, immersed the egg in water, and then removed the finger. The air being constrained by the effort made in suction, and dilated beyond its natural state, and therefore striving to recover and contract itself (so that if the egg had not been immersed in water, it would have drawn in the air with a hissing sound), now drew in a sufficient quantity of water to allow the air to recover its former dimensions.[146]

It is well ascertained that rare bodies (such as air) admit of considerable contraction, as has been before observed; but tangible bodies (such as water)

admit of it much less readily, and to a less extent. We investigated the latter point by the following experiment:

We had a leaden globe made, capable of containing about two pints, wine measure, and of tolerable thickness, so as to support considerable pressure. We poured water into it through an aperture, which we afterward closed with melted lead, as soon as the globe was filled with water, so that the whole became perfectly solid. We next flattened the two opposite sides with a heavy hammer, which necessarily caused the water to occupy a less space, since the sphere is the solid of greatest content; and when hammering failed from the resistance of the water, we made use of a mill or press, till at last the water, refusing to submit to a greater pressure, exuded like a fine dew through the solid lead. We then computed the extent to which the original space had been reduced, and concluded that water admitted such a degree of compression when constrained by great violence.

The more solid, dry or compact bodies, such as stones, wood and metals, admit of much less, and indeed scarcely any perceptible compression or expansion, but escape by breaking, slipping forward, or other efforts; as appears in bending wood, or steel for watch-springs, in projectiles, hammering and many other motions, all of which, together with their degrees, are to be observed and examined in the investigation of nature, either to a certainty, or by estimation, or comparison, as opportunity permits.

XLVI. In the twenty-second rank of prerogative instances we will place the instances of the course, which we are also wont to call water instances, borrowing our expression from the water hour-glasses employed by the ancients instead of those with sand. They are such as measure nature by the moments of time, as the last instances do by the degrees of space. For all motion or natural action takes place in time, more or less rapidly, but still in determined moments well ascertained by nature. Even those actions which appear to take effect suddenly, and in the twinkling of an eye (as we express it), are found to admit of greater or less rapidity.

In the first place, then, we see that the return of the heavenly bodies to the same place takes place in regular times, as does the flood and ebb of the sea. The descent of heavy bodies toward the earth, and the ascent of light bodies toward the heavenly sphere, take place in definite times,[147] according to the nature of the body, and of the medium through which it moves. The sailing of ships, the motions of animals, the transmission of projectiles, all take place in times the sums of which can be computed. With regard to heat, we see that boys in winter bathe their hands in the flame without being burned; and conjurers, by quick and regular movements, overturn vessels filled with wine or water, and replace them without spilling the liquid, with several similar instances. The compression, expansion and eruption of several bodies, take place more or less rapidly, according to the nature of the body and its motion, but still in definite moments.

In the explosion of several cannon at once (which are sometimes heard at the distance of thirty miles), the sound of those nearest to the spot is heard before that of the most distant. Even in sight (whose action is most rapid), it is clear that a definite time is necessary for its exertion, which is proved by certain objects being invisible from the velocity of their motion, such as a musket-ball; for the flight of the ball is too swift to allow an impression of its figure to be conveyed to the sight.

This last instance, and others of a like nature, have sometimes excited in us a most marvellous doubt, no less than whether the image of the sky and stars is perceived as at the actual moment of its existence, or rather a little after, and whether there is not (with regard to the visible appearance of the heavenly bodies) a true and apparent time, as well as a true and apparent place, which is observed by astronomers in parallaxes. It appeared so incredible to us, that the images or radiations of heavenly bodies could suddenly be conveyed through such immense spaces to the sight, and it seemed that they ought rather to be transmitted in a definite time.[148] That doubt, however (as far as regards any great difference between the true and apparent time), was subsequently completely set at rest, when we considered the infinite loss and diminution of size as regards the real and apparent magnitude of a star, occasioned by its distance, and at the same

time observed at how great a distance (at least sixty miles) bodies which are merely white can be suddenly seen by us. For there is no doubt, that the light of the heavenly bodies not only far surpasses the vivid appearance of white, but even the light of any flame (with which we are acquainted) in the vigor of its radiation. The immense velocity of the bodies themselves, which is perceived in their diurnal motion, and has so astonished thinking men, that they have been more ready to believe in the motion of the earth, renders the motion of radiation from them (marvellous as it is in its rapidity) more worthy of belief. That which has weighed most with us, however, is, that if there were any considerable interval of time between the reality and the appearance, the images would often be interrupted and confused by clouds formed in the meantime, and similar disturbances of the medium. Let this suffice with regard to the simple measures of time.

It is not merely the absolute, but still more the relative measure of motions and actions which must be inquired into, for this latter is of great use and application. We perceive that the flame of firearms is seen sooner than the sound is heard, although the ball must have struck the air before the flame, which was behind it, could escape: the reason of which is, that light moves with greater velocity than sound. We perceive, also, that visible images are received by the sight with greater rapidity than they are dismissed, and for this reason, a violin string touched with the finger appears double or triple, because the new image is received before the former one is dismissed. Hence, also, rings when spinning appear globular, and a lighted torch, borne rapidly along at night, appears to have a tail. Upon the principle of the inequality of motion, also, Galileo attempted an explanation of the flood and ebb of the sea, supposing the earth to move rapidly, and the water slowly, by which means the water, after accumulating, would at intervals fall back, as is shown in a vessel of water made to move rapidly. He has, however, imagined this on data which cannot be granted (namely, the earth’s motion), and besides, does not satisfactorily account for the tide taking place every six hours.

An example of our present point (the relative measure of motion), and, at the same time, of its remarkable use of which we have spoken, is conspicuous in mines filled with gunpowder, where immense weights of earth, buildings, and the like, are overthrown and prostrated by a small quantity of powder; the reason of which is decidedly this, that the motion of the expansion of the gunpowder is much more rapid than that of gravity,[149] which would resist it, so that the former has terminated before the latter has commenced. Hence, also, in missiles, a strong blow will not carry them so far as a sharp and rapid one. Nor could a small portion of animal spirit in animals, especially in such vast bodies as those of the whale and elephant, have ever bent or directed such a mass of body, were it not owing to the velocity of the former, and the slowness of the latter in resisting its motion.

In short, this point is one of the principal foundations of the magic experiments (of which we shall presently speak), where a small mass of matter overcomes and regulates a much larger, if there but be an anticipation of motion, by the velocity of one before the other is prepared to act.

Finally, the point of the first and last should be observed in all natural actions. Thus, in an infusion of rhubarb the purgative property is first extracted, and then the astringent; we have experienced something of the same kind in steeping violets in vinegar, which first extracts the sweet and delicate odor of the flower, and then the more earthy part, which disturbs the perfume; so that if the violets be steeped a whole day, a much fainter perfume is extracted than if they were steeped for a quarter of an hour only, and then taken out; and since the odoriferous spirit in the violet is not abundant, let other and fresh violets be steeped in the vinegar every quarter of an hour, as many as six times, when the infusion becomes so strengthened, that although the violets have not altogether remained there for more than one hour and a half, there remains a most pleasing perfume, not inferior to the flower itself, for a whole year. It must be observed, however, that the perfume does not acquire its full strength till about a month after the infusion. In the distillation of aromatic plants macerated in spirits of wine, it is well known that an aqueous and useless phlegm rises first, then water

containing more of the spirit, and, lastly, water containing more of the aroma; and many observations of the like kind, well worthy of notice, are to be made in distillations. But let these suffice as examples.[150]

XLVII. In the twenty-third rank of prerogative instances we will place instances of quantity, which we are also wont to call the doses of nature (borrowing a word from medicine). They are such as measure the powers by the quantity of bodies, and point out the effect of the quantity in the degree of power. And in the first place, some powers only subsist in the universal quantity, or such as bears a relation to the confirmation and fabric of the universe. Thus the earth is fixed, its parts fall. The waters in the sea flow and ebb, but not in the rivers, except by the admission of the sea. Then, again, almost all particular powers act according to the greater or less quantity of the body. Large masses of water are not easily rendered foul, small are. New wine and beer become ripe and drinkable in small skins much more readily than in large casks. If a herb be placed in a considerable quantity of liquid, infusion takes place rather than impregnation; if in less, the reverse. A bath, therefore, and a light sprinkling, produce different effects on the human body. Light dew, again, never falls, but is dissipated and incorporated with the air; thus we see that in breathing on gems, the slight quantity of moisture, like a small cloud in the air, is immediately dissolved. Again, a piece of the same magnet does not attract so much iron as the whole magnet did. There are some powers where the smallness of the quantity is of more avail; as in boring, a sharp point pierces more readily than a blunt one; the diamond, when pointed, makes an impression on glass, and the like.

Here, too, we must not rest contented with a vague result, but inquire into the exact proportion of quantity requisite for a particular exertion of power; for one would be apt to suppose that the power bears an exact proportion to the quantity; that if a leaden bullet of one ounce, for instance, would fall in a given time, one of two ounces ought to fall twice as rapidly, which is most erroneous. Nor does the same ratio prevail in every kind of power, their difference being

considerable. The measure, therefore, must be determined by experiment, and not by probability or conjecture.

Lastly, we must in all our investigations of nature observe what quantity, or dose, of the body is requisite for a given effect, and must at the same time be guarded against estimating it at too much or too little.

XLVIII. In the twenty-fourth rank of prerogative instances we will place wrestling instances, which we are also wont to call instances of predominance. They are such as point out the predominance and submission of powers compared with each other, and which of them is the more energetic and superior, or more weak and inferior. For the motions and effects of bodies are compounded, decomposed, and combined, no less than the bodies themselves. We will exhibit, therefore, the principal kinds of motions or active powers, in order that their comparative strength, and thence a demonstration and definition of the instances in question, may be rendered more clear.

Let the first motion be that of the resistance of matter, which exists in every particle, and completely prevents its annihilation; so that no conflagration, weight, pressure, violence, or length of time can reduce even the smallest portion of matter to nothing, or prevent it from being something, and occupying some space, and delivering itself (whatever straits it be put to), by changing its form or place, or, if that be impossible, remaining as it is; nor can it ever happen that it should either be nothing or nowhere. This motion is designated by the schools (which generally name and define everything by its effects and inconveniences rather than by its inherent cause) by the axiom, that two bodies cannot exist in the same place, or they call it a motion to prevent the penetration of dimensions. It is useless to give examples of this motion, since it exists in every body.

Let the second motion be that which we term the motion of connection, by which bodies do not allow themselves to be separated at any point from the contact of another body, delighting, as it were, in the mutual connection and contact. This is called by the schools a motion to prevent a vacuum. It takes place when water is drawn up by suction or a syringe, the flesh by cupping, or

when the water remains without escaping from perforated jars, unless the mouth be opened to admit the air, and innumerable instances of a like nature.

Let the third be that which we term the motion of liberty, by which bodies strive to deliver themselves from any unnatural pressure or tension, and to restore themselves to the dimensions suited to their mass; and of which, also, there are innumerable examples. Thus, we have examples of their escaping from pressure, in the water in swimming, in the air in flying, in the water again in rowing, and in the air in the undulation of the winds, and in springs of watches. An exact instance of the motion of compressed air is seen in children's popguns, which they make by scooping out elder-branches or some such matter, and forcing in a piece of some pulpy root or the like, at each end; then they force the root or other pellet with a ramrod to the opposite end, from which the lower pellet is emitted and projected with a report, and that before it is touched by the other piece of root or pellet, or by the ramrod. We have examples of their escape from tension, in the motion of the air that remains in glass eggs after suction, in strings, leather, and cloth, which recoil after tension, unless it be long continued. The schools define this by the term of motion from the form of the element; injudiciously enough, since this motion is to be found not only in air, water, or fire, but in every species of solid, as wood, iron, lead, cloth, parchment, etc., each of which has its own proper size, and is with difficulty stretched to any other. Since, however, this motion of liberty is the most obvious of all, and to be seen in an infinite number of cases, it will be as well to distinguish it correctly and clearly; for some most carelessly confound this with the two others of resistance and connection; namely, the freedom from pressure with the former, and that from tension with the latter, as if bodies when compressed yielded or expanded to prevent a penetration of dimensions, and when stretched rebounded and contracted themselves to prevent a vacuum. But if the air, when compressed, could be brought to the density of water, or wood to that of stone, there would be no need of any penetration of dimensions, and yet the compression would be much greater than they actually admit of. So if water could be expanded till it became as rare as air, or stone as rare as wood, there would be no need of a

vacuum, and yet the expansion would be much greater than they actually admit of.

We do not, therefore, arrive at a penetration of dimensions or a vacuum before the extremes of condensation and rarefaction, while the motion we speak of stops and exerts itself much within them, and is nothing more than a desire of bodies to preserve their specific density (or, if it be preferred, their form), and not to desert them suddenly, but only to change by degrees, and of their own accord. It is, however, much more necessary to intimate to mankind (because many other points depend upon this), that the violent motion which we call mechanical, and Democritus (who, in explaining his primary motions, is to be ranked even below the middling class of philosophers) termed the motion of a blow, is nothing else than this motion of liberty, namely, a tendency to relaxation from compression. For in all simple impulsion or flight through the air, the body is not displaced or moved in space, until its parts are placed in an unnatural state, and compressed by the impelling force. When that takes place, the different parts urging the other in succession, the whole is moved, and that with a rotatory as well as progressive motion, in order that the parts may, by this means also, set themselves at liberty, or more readily submit. Let this suffice for the motion in question.

Let the fourth be that which we term the motion of matter, and which is opposed to the last; for in the motion of liberty, bodies abhor, reject, and avoid, a new size or volume, or any new expansion or contraction (for these different terms have the same meaning), and strive, with all their power, to rebound and resume their former density; on the contrary, in the motion of matter, they are anxious to acquire a new volume or dimension, and attempt it willingly and rapidly, and occasionally by a most vigorous effort, as in the example of gunpowder. The most powerful, or at least most frequent, though not the only instruments of this motion, are heat and cold. For instance, the air, if expanded by tension (as by suction in the glass egg), struggles anxiously to restore itself; but if heat be applied, it strives, on the contrary, to dilate itself, and longs for a larger volume, regularly passing and migrating into it, as into a new form (as it is

termed); nor after a certain degree of expansion is it anxious to return, unless it be invited to do so by the application of cold, which is not indeed a return, but a fresh change. So also water, when confined by compression, resists, and wishes to become as it was before, namely, more expanded; but if there happen an intense and continued cold, it changes itself readily, and of its own accord, into the condensed state of ice; and if the cold be long continued, without any intervening warmth (as in grottoes and deep caves), it is changed into crystal or similar matter, and never resumes its form.

Let the fifth be that which we term the motion of continuity. We do not understand by this simple and primary continuity with any other body (for that is the motion of connection), but the continuity of a particular body in itself; for it is most certain that all bodies abhor a solution of continuity, some more and some less, but all partially. In hard bodies (such as steel and glass) the resistance to an interruption of continuity is most powerful and efficacious, while although in liquids it appears to be faint and languid, yet it is not altogether null, but exists in the lowest degree, and shows itself in many experiments, such as bubbles, the round form of drops, the thin threads which drip from roofs, the cohesion of glutinous substances, and the like. It is most conspicuous, however, if an attempt be made to push this separation to still smaller particles. Thus, in mortars, the pestle produces no effect after a certain degree of contusion, water does not penetrate small fissures, and the air itself, notwithstanding its subtilty, does not penetrate the pores of solid vessels at once, but only by long-continued insinuation.

Let the sixth be that which we term the motion of acquisition, or the motion of need.[151] It is that by which bodies placed among others of a heterogeneous and, as it were, hostile nature, if they meet with the means or opportunity of avoiding them, and uniting themselves with others of a more analogous nature, even when these latter are not closely allied to them, immediately seize and, as it were, select them, and appear to consider it as something acquired (whence we derive the name), and to have need of these latter bodies. For instance, gold, or any other metal in leaf, does not like the neighborhood of air; if, therefore, they

meet with any tangible and thick substance (such as the finger, paper, or the like), they immediately adhere to it, and are not easily torn from it. Paper, too, and cloth, and the like, do not agree with the air, which is inherent and mixed in their pores. They readily, therefore, imbibe water or other liquids, and get rid of the air. Sugar, or a sponge, dipped in water or wine, and though part of it be out of the water or wine, and at some height above it, will yet gradually absorb them.[152]

Hence an excellent rule is derived for the opening and dissolution of bodies; for (not to mention corrosive and strong waters, which force their way) if a body can be found which is more adapted, suited, and friendly to a given solid, than that with which it is by some necessity united, the given solid immediately opens and dissolves itself to receive the former, and excludes or removes the latter.[153] Nor is the effect or power of this motion confined to contact, for the electric energy (of which Gilbert and others after him have told so many fables) is only the energy excited in a body by gentle friction, and which does not endure the air, but prefers some tangible substance if there be any at hand.

Let the seventh be that which we term the motion of greater congregation, by which bodies are borne toward masses of a similar nature, for instance, heavy bodies toward the earth, light to the sphere of heaven. The schools termed this natural motion, by a superficial consideration of it, because produced by no external visible agent, which made them consider it innate in the substances; or perhaps because it does not cease, which is little to be wondered at, since heaven and earth are always present, while the causes and sources of many other motions are sometimes absent and sometimes present. They therefore called this perpetual and proper, because it is never interrupted, but instantly takes place when the others are interrupted, and they called the others adscititious. The former, however, is in reality weak and slow, since it yields, and is inferior to the others as long as they act, unless the mass of the body be great; and although this motion have so filled men’s minds, as almost to have obscured all others, yet they know but little about it, and commit many errors in its estimate.

Let the eighth be that which we term the motion of lesser congregation, by which the homogeneous parts in any body separate themselves from the heterogeneous and unite together, and whole bodies of a similar substance coalesce and tend toward each other, and are sometimes congregated, attracted, and meet, from some distance; thus in milk the cream rises after a certain time, and in wine the dregs and tartar sink; which effects are not to be attributed to gravity and levity only, so as to account for the rising of some parts and the sinking of others, but much more to the desire of the homogeneous bodies to meet and unite. This motion differs from that of need in two points: 1st, because the latter is the stimulus of a malignant and contrary nature, while in this of which we treat (if there be no impediment or restraint), the parts are united by their affinity, although there be no foreign nature to create a struggle; 2dly, because the union is closer and more select. For in the other motion, bodies which have no great affinity unite, if they can but avoid the hostile body, while in this, substances which are connected by a decided kindred resemblance come together and are molded into one. It is a motion existing in all compound bodies, and would be readily seen in each, if it were not confined and checked by the other affections and necessities of bodies which disturb the union.

This motion is usually confined in the three following manners: by the torpor of the bodies; by the power of the predominating body; by external motion. With regard to the first, it is certain that there is more or less sluggishness in tangible bodies, and an abhorrence of locomotion; so that unless excited they prefer remaining contented with their actual state, to placing themselves in a better position. There are three means of breaking through this sluggishness — heat; the active power of a similar body; vivid and powerful motion. With regard to the first, heat is, on this account, defined as that which separates heterogeneous, and draws together homogeneous substances; a definition of the Peripatetics which is justly ridiculed by Gilbert, who says it is as if one were to define man to be that which sows wheat and plants vineyards; being only a definition deduced from effects, and those but partial. But it is still more to be blamed, because those effects, such as they are, are not a peculiar property of heat, but a mere

accident (for cold, as we shall afterward show, does the same), arising from the desire of the homogeneous parts to unite; the heat then assists them in breaking through that sluggishness which before restrained their desire. With regard to the assistance derived from the power of a similar body, it is most conspicuous in the magnet when armed with steel, for it excites in the steel a power of adhering to steel, as a homogeneous substance, the power of the magnet breaking through the sluggishness of the steel. With regard to the assistance of motion, it is seen in wooden arrows or points, which penetrate more deeply into wood than if they were tipped with iron, from the similarity of the substance, the swiftness of the motion breaking through the sluggishness of the wood; of which two last experiments we have spoken above in the aphorism on clandestine instances.[154]

The confinement of the motion of lesser congregation, which arises from the power of the predominant body, is shown in the decomposition of blood and urine by cold. For as long as these substances are filled with the active spirit, which regulates and restrains each of their component parts, as the predominant ruler of the whole, the several different parts do not collect themselves separately on account of the check; but as soon as that spirit has evaporated, or has been choked by the cold, then the decomposed parts unite, according to their natural desire. Hence it happens, that all bodies which contain a sharp spirit (as salts and the like), last without decomposition, owing to the permanent and durable power of the predominating and imperious spirit.

The confinement of the motion of lesser congregation, which arises from external motion, is very evident in that agitation of bodies which preserves them from putrefaction. For all putrefaction depends on the congregation of the homogeneous parts, whence, by degrees, there ensues a corruption of the first form (as it is called), and the generation of another. For the decomposition of the original form, which is itself the union of the homogeneous parts, precedes the putrefaction, which prepares the way for the generation of another. This decomposition, if not interrupted, is simple; but if there be various obstacles, putrefactions ensue, which are the rudiments of a new generation. But if (to come to our present point) a frequent agitation be excited by external motion, the

motion toward union (which is delicate and gentle, and requires to be free from all external influence) is disturbed, and ceases; which we perceive to be the case in innumerable instances. Thus, the daily agitation or flowing of water prevents putrefaction; winds prevent the air from being pestilent; corn turned about and shaken in granaries continues clean: in short, everything which is externally agitated will with difficulty rot internally.

We must not omit that union of the parts of bodies which is the principal cause of induration and desiccation. When the spirit or moisture, which has evaporated into spirit, has escaped from a porous body (such as wood, bone, parchment, and the like), the thicker parts are drawn together, and united with a greater effort, and induration or desiccation is the consequence; and this we attribute not so much to the motion of connection (in order to prevent a vacuum), as to this motion of friendship and union.

Union from a distance is rare, and yet is to be met with in more instances than are generally observed. We perceive it when one bubble dissolves another, when medicines attract humors from a similarity of substance, when one string moves another in unison with it on different instruments, and the like. We are of opinion that this motion is very prevalent also in animal spirits, but are quite ignorant of the fact. It is, however, conspicuous in the magnet, and magnetized iron. While speaking of the motions of the magnet, we must plainly distinguish them, for there are four distinct powers or effects of the magnet which should not be confounded, although the wonder and astonishment of mankind has classed them together. 1. The attraction of the magnet to the magnet, or of iron to the magnet, or of magnetized iron to iron. 2. Its polarity toward the north and south, and its variation. 3. Its penetration through gold, glass, stone, and all other substances. 4. The communication of power from the mineral to iron, and from iron to iron, without any communication of the substances. Here, however, we only speak of the first. There is also a singular motion of attraction between quicksilver and gold, so that the gold attracts quicksilver even when made use of in ointment; and those who work surrounded by the vapors of quicksilver, are wont to hold a piece of gold in their mouths, to collect the exhalations, which would otherwise attack their heads and bones, and this piece soon grows white.[155] Let this suffice for the motion of lesser congregation.

Let the ninth be the magnetic motion, which, although of the nature of that last mentioned, yet, when operating at great distances, and on great masses, deserves a separate inquiry, especially if it neither begin in contact, as most motions of congregation do, nor end by bringing the substances into contact, as all do, but only raise them, and make them swell without any further effect. For if the moon raise the waters, or cause moist substances to swell, or if the starry sphere attract the planets toward their apogees, or the sun confine the planets Mercury and Venus to within a certain distance of his mass;[156] these motions do not appear capable of being classed under either of those of congregation, but to be, as it were, intermediately and imperfectly congregative, and thus to form a distinct species.

Let the tenth motion be that of avoidance, or that which is opposed to the motion of lesser congregation, by which bodies, with a kind of antipathy, avoid and disperse, and separate themselves from, or refuse to unite themselves with others of a hostile nature. For although this may sometimes appear to be an accidental motion, necessarily attendant upon that of the lesser congregation, because the homogeneous parts cannot unite, unless the heterogeneous be first removed and excluded, yet it is still to be classed separately,[157] and considered as a distinct species, because, in many cases, the desire of avoidance appears to be more marked than that of union.

It is very conspicuous in the excrements of animals, nor less, perhaps, in objects odious to particular senses, especially the smell and taste; for a fetid smell is rejected by the nose, so as to produce a sympathetic motion of expulsion at the mouth of the stomach; a bitter and rough taste is rejected by the palate or throat, so as to produce a sympathetic concussion and shivering of the head. This motion is visible also in other cases. Thus it is observed in some kinds of antiperistasis, as in the middle region of the air, the cold of which appears to be occasioned by the rejection of cold from the regions of the heavenly bodies; and also in the heat and combustion observed in subterranean spots, which appear to be owing to the rejection of heat from the centre of the earth. For heat and cold, when in small quantities, mutually destroy each other, while in larger quantities, like armies equally matched, they remove and eject each other in open conflict. It is said, also that cinnamon and other perfumes retain their odor longer when placed near privies and foul places, because they will not unite and mix with stinks. It is well known that quicksilver, which would otherwise reunite into a complete mass, is prevented from so doing by man's spittle, pork lard, turpentine and the like, from the little affinity of its parts with those substances, so that when surrounded by them it draws itself back, and its avoidance of these intervening obstacles is greater than its desire of reuniting itself to its homogeneous parts; which is what they term the mortification of quicksilver. Again, the difference in weight of oil and water is not the only reason for their refusing to mix, but it is also owing to the little affinity of the two; for spirits of

wine, which are lighter than oil, mix very well with water. A very remarkable instance of the motion in question is seen in nitre, and crude bodies of a like nature, which abhor flame, as may be observed in gunpowder, quicksilver and gold. The avoidance of one pole of the magnet by iron is not (as Gilbert has well observed), strictly speaking, an avoidance, but a conformity, or attraction to a more convenient situation.

Let the eleventh motion be that of assimilation, or self-multiplication, or simple generation, by which latter term we do not mean the simple generation of integral bodies, such as plants or animals, but of homogeneous bodies. By this motion homogeneous bodies convert those which are allied to them, or at least well disposed and prepared, into their own substance and nature. Thus flame multiplies itself over vapors and oily substances and generates fresh flame; the air over water and watery substances multiplies itself and generates fresh air; the vegetable and animal spirit, over the thin particles of a watery or oleaginous spirit contained in its food, multiplies itself and generates fresh spirit; the solid parts of plants and animals, as the leaf, flower, the flesh, bone and the like, each of them assimilate some part of the juices contained in their food, and generate a successive and daily substance. For let none rave with Paracelsus, who (blinded by his distillations) would have it, that nutrition takes place by mere separation, and that the eye, nose, brain and liver lie concealed in bread and meat, the root, leaf and flower, in the juice of the earth; asserting that just as the artist brings out a leaf, flower, eye, nose, hand, foot and the like, from a rude mass of stone or wood by the separation and rejection of what is superfluous; so the great artist within us brings out our several limbs and parts by separation and rejection. But to leave such trifling, it is most certain that all the parts of vegetables and animals, as well the homogeneous as organic, first of all attract those juices contained in their food, which are nearly common, or at least not very different, and then assimilate and convert them into their own nature. Nor does this assimilation, or simple generation, take place in animated bodies only, but the inanimate also participate in the same property (as we have observed of flame and air), and that languid spirit, which is contained in every tangible animated

substance, is perpetually working upon the coarser parts, and converting them into spirit, which afterward is exhaled, whence ensues a diminution of weight, and a desiccation of which we have spoken elsewhere.[158]

Nor should we, in speaking of assimilation, neglect to mention the accretion which is usually distinguished from aliment, and which is observed when mud grows into a mass between stones, and is converted into a stony substance, and the scaly substance round the teeth is converted into one no less hard than the teeth themselves; for we are of opinion that there exists in all bodies a desire of assimilation, as well as of uniting with homogeneous masses. Each of these powers, however, is confined, although in different manners, and should be diligently investigated, because they are connected with the revival of old age. Lastly, it is worthy of observation, that in the nine preceding motions, bodies appear to aim at the mere preservation of their nature, while in this they attempt its propagation.

Let the twelfth motion be that of excitement, which appears to be a species of the last, and is sometimes mentioned by us under that name. It is, like that, a diffusive, communicative, transitive and multiplying motion; and they agree remarkably in their effect, although they differ in their mode of action, and in their subject matter. The former proceeds imperiously and with authority; it orders and compels the assimilated to be converted and changed into the assimilating body. The latter proceeds by art, insinuation and stealth, inviting and disposing the excited toward the nature of the exciting body. The former both multiplies and transforms bodies and substances; thus a greater quantity of flame, air, spirit and flesh is formed; but in the latter, the powers only are multiplied and changed, and heat, the magnetic power, and putrefaction, in the above instances, are increased. Heat does not diffuse itself when heating other bodies by any communication of the original heat, but only by exciting the parts of the heated body to that motion which is the form of heat, and of which we spoke in the first vintage of the nature of heat. Heat, therefore, is excited much less rapidly and readily in stone or metal than in air, on account of the inaptitude

and sluggishness of those bodies in acquiring that motion, so that it is probable, that there may be some substances, toward the centre of the earth, quite incapable of being heated, on account of their density, which may deprive them of the spirit by which the motion of excitement is usually commenced. Thus also the magnet creates in the iron a new disposition of its parts, and a conformable motion, without losing any of its virtue. So the leaven of bread, yeast, rennet and some poisons, excite and invite successive and continued motion in dough, beer, cheese or the human body; not so much from the power of the exciting, as the predisposition and yielding of the excited body.

Let the thirteenth motion be that of impression, which is also a species of motion of assimilation, and the most subtile of diffusive motions. We have thought it right, however, to consider it as a distinct species, on account of its remarkable difference from the last two; for the simple motion of assimilation transforms the bodies themselves, so that if you remove the first agent, you diminish not the effect of those which succeed; thus, neither the first lighting of flame, nor the first conversion into air, are of any importance to the flame or air next generated. So, also, the motion of excitement still continues for a considerable time after the removal of the first agent, as in a heated body on the removal of the original heat, in the excited iron on the removal of the magnet, and in the dough on the removal of the leaven. But the motion of impression, although diffusive and transitive, appears, nevertheless, to depend on the first agent, so that upon the removal of the latter the former immediately fails and perishes; for which reason also it takes effect in a moment, or at least a very short space of time. We are wont to call the two former motions the motions of the generation of Jupiter, because when born they continue to exist; and the latter, the motion of the generation of Saturn, because it is immediately devoured and absorbed. It may be seen in three instances: 1, in the rays of light; 2, in the percussions of sounds; 3, in magnetic attractions as regards communication. For, on the removal of light, colors and all its other images disappear, as on the cessation of the first percussion and the vibration of the body, sound soon fails, and although sounds are agitated by the wind, like waves, yet it is to be

observed, that the same sound does not last during the whole time of the reverberation. Thus, when a bell is struck, the sound appears to be continued for a considerable time, and one might easily be led into the mistake of supposing it to float and remain in the air during the whole time, which is most erroneous.[159] For the reverberation is not one identical sound, but the repetition of sounds, which is made manifest by stopping and confining the sonorous body; thus, if a bell be stopped and held tightly, so as to be immovable, the sound fails, and there is no further reverberation, and if a musical string be touched after the first vibration, either with the finger (as in the harp), or a quill (as in the harpsichord), the sound immediately ceases. If the magnet be removed the iron falls. The moon, however, cannot be removed from the sea, nor the earth from a heavy falling body, and we can, therefore, make no experiment upon them; but the case is the same.

Let the fourteenth motion be that configuration or position, by which bodies appear to desire a peculiar situation, collocation, and configuration with others, rather than union or separation. This is a very abstruse notion, and has not been well investigated; and, in some instances, appears to occur almost without any cause, although we be mistaken in supposing this to be really the case. For if it be asked, why the heavens revolve from east to west, rather than from west to east, or why they turn on poles situate near the Bears, rather than round Orion or any other part of the heaven, such a question appears to be unreasonable, since these phenomena should be received as determinate and the objects of our experience. There are, indeed, some ultimate and self-existing phenomena in nature, but those which we have just mentioned are not to be referred to that class: for we attribute them to a certain harmony and consent of the universe, which has not yet been properly observed. But if the motion of the earth from west to east be allowed, the same question may be put, for it must also revolve round certain poles, and why should they be placed where they are, rather than elsewhere? The polarity and variation of the needle come under our present head. There is also observed in both natural and artificial bodies, especially solids rather than fluids, a particular collocation and position of parts,

resembling hairs or fibres, which should be diligently investigated, since, without a discovery of them, bodies cannot be conveniently controlled or wrought upon. The eddies observable in liquids by which, when compressed, they successively raise different parts of their mass before they can escape, so as to equalize the pressure, is more correctly assigned to the motion of liberty.

Let the fifteenth motion be that of transmission or of passage, by which the powers of bodies are more or less impeded or advanced by the medium, according to the nature of the bodies and their effective powers, and also according to that of the medium. For one medium is adapted to light, another to sound, another to heat and cold, another to magnetic action, and so on with regard to the other actions.

Let the sixteenth be that which we term the royal or political motion, by which the predominant and governing parts of any body check, subdue, reduce, and regulate the others, and force them to unite, separate, stand still, move, or assume a certain position, not from any inclination of their own, but according to a certain order, and as best suits the convenience of the governing part, so that there is a sort of dominion and civil government exercised by the ruling part over its subjects. The motion is very conspicuous in the spirits of animals, where, as long as it is in force, it tempers all the motions of the other parts. It is found in a less degree in other bodies, as we have observed in blood and urine, which are not decomposed until the spirit, which mixed and retained their parts, has been emitted or extinguished. Nor is this motion peculiar to spirits only, although in most bodies the spirit predominates, owing to its rapid motion and penetration; for the grosser parts predominate in denser bodies, which are not filled with a quick and active spirit (such as exists in quicksilver or vitriol), so that unless this check or yoke be thrown off by some contrivance, there is no hope of any transformation of such bodies. And let not any one suppose that we have forgotten our subject, because we speak of predominance in this classification of motions, which is made entirely with the view of assisting the investigation of wrestling instances, or instances of predominance. For we do not now treat of

the general predominance of motions or powers, but of that of parts in whole bodies, which constitutes the particular species here considered.

Let the seventeenth motion be the spontaneous motion of revolution, by which bodies having a tendency to move, and placed in a favorable situation, enjoy their peculiar nature, pursuing themselves and nothing else, and seeking, as it were, to embrace themselves. For bodies seem either to move without any limit, or to tend toward a limit, arrived at which they either revolve according to their peculiar nature, or rest. Those which are favorably situated, and have a tendency to motion, move in a circle with an eternal and unlimited motion; those which are favorably situated and abhor motion, rest. Those which are not favorably situated move in a straight line (as their shortest path), in order to unite with others of a congenial nature. This motion of revolution admits of nine differences: 1, with regard to the centre about which the bodies move; 2, the poles round which they move; 3, the circumference or orbit relatively to its distance from the centre; 4, the velocity, or greater or less speed with which they revolve; 5, the direction of the motion as from east to west, or the reverse; 6, the deviation from a perfect circle, by spiral lines at a greater or less distance from the centre; 7, the deviation from the circle, by spiral lines at a greater or less distance from the poles; 8, the greater or less distance of these spirals from each other; 9, and lastly, the variation of the poles if they be movable; which, however, only affects revolution when circular. The motion in question is, according to common and long-received opinion, considered to be that of the heavenly bodies. There exists, however, with regard to this, a considerable dispute between some of the ancients as well as moderns, who have attributed a motion of revolution to the earth. A much more reasonable controversy, perhaps, exists (if it be not a matter beyond dispute), whether the motion in question (on the hypothesis of the earth's being fixed) is confined to the heavens, or rather descends and is communicated to the air and water. The rotation of missiles, as in darts, musket-balls, and the like, we refer entirely to the motion of liberty.

Let the eighteenth motion be that of trepidation,[160] to which (in the sense assigned to it by astronomers) we do not give much credit; but in our serious and

general search after the tendencies of natural bodies, this motion occurs, and appears worthy of forming a distinct species. It is the motion of an (as it were) eternal captivity; when bodies, for instance, being placed not altogether according to their nature, and yet not exactly ill, constantly tremble, and are restless, not contented with their position, and yet not daring to advance. Such is the motion of the heart and pulse of animals, and it must necessarily occur in all bodies which are situated in a mean state, between conveniences and inconveniences; so that being removed from their proper position, they strive to escape, are repulsed, and again continue to make the attempt.

Let the nineteenth and last motion be one which can scarcely be termed a motion, and yet is one; and which we may call the motion of repose, or of abhorrence of motion. It is by this motion that the earth stands by its own weight, while its extremes move toward the middle, not to an imaginary centre, but in order to unite. It is owing to the same tendency, that all bodies of considerable density abhor motion, and their only tendency is not to move, which nature they preserve, although excited and urged in a variety of ways to motion. But if they be compelled to move, yet do they always appear anxious to recover their former state, and to cease from motion, in which respect they certainly appear active, and attempt it with sufficient swiftness and rapidity, as if fatigued, and impatient of delay. We can only have a partial representation of this tendency, because with us every tangible substance is not only not condensed to the utmost, but even some spirit is added, owing to the action and concocting influence of the heavenly bodies.

We have now, therefore, exhibited the species, or simple elements of the motions, tendencies, and active powers, which are most universal in nature; and no small portion of natural science has been thus sketched out. We do not, however, deny that other instances can perhaps be added, and our divisions changed according to some more natural order of things, and also reduced to a less number; in which respect we do not allude to any abstract classification, as if one were to say, that bodies desire the preservation, exaltation, propagation, or fruition of their nature; or, that motion tends to the preservation and benefit

either of the universe (as in the case of those of resistance and connection), or of extensive wholes, as in the case of those of the greater congregation, revolution, and abhorrence of motion, or of particular forms, as in the case of the others. For although such remarks be just, yet, unless they terminate in matter and construction, according to true definitions, they are speculative, and of little use. In the meantime, our classification will suffice, and be of much use in the consideration of the predominance of powers, and examining the wrestling instances which constitute our present subject.

For of the motions here laid down, some are quite invincible, some more powerful than others, which they confine, check, and modify; others extend to a greater distance, others are more immediate and swift, others strengthen, increase, and accelerate the rest.

The motion of resistance is most adamantine and invincible. We are yet in doubt whether such be the nature of that of connection; for we cannot with certainty determine whether there be a vacuum, either extensive or intermixed with matter. Of one thing, however, we are satisfied, that the reason assigned by Leucippus and Democritus for the introduction of a vacuum (namely, that the same bodies could not otherwise comprehend, and fill greater and less spaces) is false. For there is clearly a folding of matter, by which it wraps and unwraps itself in space within certain limits, without the intervention of a vacuum. Nor is there two thousand times more of vacuum in air than in gold, as there should be on this hypothesis; a fact demonstrated by the very powerful energies of fluids (which would otherwise float like fine dust *in vacuo*), and many other proofs. The other motions direct, and are directed by each other, according to their strength, quantity, excitement, emission, or the assistance or impediments they meet with.

For instance; some armed magnets hold and support iron of sixty times their own weight; so far does the motion of lesser congregation predominate over that of the greater; but if the weight be increased, it yields. A lever of a certain strength will raise a given weight, and so far the motion of liberty predominates

over that of the greater congregation, but if the weight be greater, the former motion yields. A piece of leather stretched to a certain point does not break, and so far the motion of continuity predominates over that of tension, but if the tension be greater, the leather breaks, and the motion of continuity yields. A certain quantity of water flows through a chink, and so far the motion of greater congregation predominates over that of continuity, but if the chink be smaller it yields. If a musket be charged with ball and powdered sulphur alone, and fire be applied, the ball is not discharged, in which case the motion of greater congregation overcomes that of matter; but when gunpowder is used, the motion of matter in the sulphur predominates, being assisted by that motion, and the motion of avoidance in the nitre; and so of the rest. For wrestling instances (which show the predominance of powers, and in what manner and proportion they predominate and yield) must be searched for with active and industrious diligence.

The methods and nature of this yielding must also be diligently examined, as for instance, whether the motions completely cease, or exert themselves, but are constrained. For in the bodies with which we are acquainted, there is no real but an apparent rest, either in the whole or in parts. This apparent rest is occasioned either by equilibrium, or the absolute predominance of motions. By equilibrium, as in the scales of the balance, which rest if the weights be equal. By predominance, as in perforated jars, in which the water rests, and is prevented from falling by the predominance of the motion of connection. It is, however, to be observed (as we have said before), how far the yielding motions exert themselves. For if a man be held stretched out on the ground against his will, with arms and legs bound down, or otherwise confined, and yet strive with all his power to get up, the struggle is not the less, although ineffectual. The real state of the case (namely, whether the yielding motion be, as it were, annihilated by the predominance, or there be rather a continued, although an invisible effort) will, perhaps, appear in the concurrence of motions, although it escape our notice in their conflict. For instance: let an experiment be made with muskets; whether a musket-ball, at its utmost range in a straight line, or (as it is commonly

called) point-blank, strike with less force when projected upward, where the motion of the blow is simple, than when projected downward, where the motion of gravity concurs with the blow.

The rules of such instances of predominance as occur should be collected: such as the following; the more general the desired advantage is, the stronger will be the motion; the motion of connection, for instance, which relates to the intercourse of the parts of the universe, is more powerful than that of gravity, which relates to the intercourse of dense bodies only. Again, the desire of a private good does not in general prevail against that of a public one, except where the quantities are small. Would that such were the case in civil matters!

XLIX. In the twenty-fifth rank of prerogative instances we will place suggesting instances; such as suggest, or point out, that which is advantageous to mankind; for bare power and knowledge in themselves exalt rather than enrich human nature. We must, therefore, select from the general store such things as are most useful to mankind. We shall have a better opportunity of discussing these when we treat of the application to practice; besides, in the work of interpretation, we leave room, on every subject, for the human or optative chart; for it is a part of science to make judicious inquiries and wishes.

L. In the twenty-sixth rank of prerogative instances we will place the generally useful instances. They are such as relate to various points, and frequently occur, sparing by that means considerable labor and new trials. The proper place for treating of instruments and contrivances, will be that in which we speak of the application to practice, and the methods of experiment. All that has hitherto been ascertained, and made use of, will be described in the particular history of each art. At present, we will subjoin a few general examples of the instances in question.

Man acts, then, upon natural bodies (besides merely bringing them together or removing them) by seven principal methods: 1, by the exclusion of all that impedes and disturbs; 2, by compression, extension, agitation, and the like; 3, by heat and cold; 4, by detention in a suitable place; 5, by checking or directing

motion; 6, by peculiar harmonies; 7, by a seasonable and proper alternation, series, and succession of all these, or, at least, of some of them.

1. With regard to the first — common air, which is always at hand, and forces its admission, as also the rays of the heavenly bodies, create much disturbance. Whatever, therefore, tends to exclude them may well be considered as generally useful. The substance and thickness of vessels in which bodies are placed when prepared for operations may be referred to this head. So also may the accurate methods of closing vessels by consolidation, or the *lutum sapientiæ*, as the chemists call it. The exclusion of air by means of liquids at the extremity is also very useful, as when they pour oil on wine, or the juices of herbs, which by spreading itself upon the top like a cover, preserves them uninjured from the air. Powders, also, are serviceable, for although they contain air mixed up in them, yet they ward off the power of the mass of circumambient air, which is seen in the preservation of grapes and other fruits in sand or flour. Wax, honey, pitch, and other resinous bodies, are well used in order to make the exclusion more perfect, and to remove the air and celestial influence. We have sometimes made an experiment by placing a vessel or other bodies in quicksilver, the most dense of all substances capable of being poured round others. Grottoes and subterraneous caves are of great use in keeping off the effects of the sun, and the predatory action of air, and in the north of Germany are used for granaries. The depositing of bodies at the bottom of water may be also mentioned here; and I remember having heard of some bottles of wine being let down into a deep well in order to cool them, but left there by chance, carelessness, and forgetfulness for several years, and then taken out; by which means the wine not only escaped becoming flat or dead, but was much more excellent in flavor, arising (as it appears) from a more complete mixture of its parts. But if the case require that bodies should be sunk to the bottom of water, as in rivers or the sea, and yet should not touch the water, nor be inclosed in sealed vessels, but surrounded only by air, it would be right to use that vessel which has been sometimes employed under water above ships that have sunk, in order to enable the divers to remain below and breathe occasionally by turns. It was of the following

nature: A hollow tub of metal was formed, and sunk so as to have its bottom parallel with the surface of the water; it thus carried down with it to the bottom of the sea all the air contained in the tub. It stood upon three feet (like a tripod), being of rather less height than a man, so that, when the diver was in want of breath, he could put his head into the hollow of the tub, breathe, and then continue his work. We hear that some sort of boat or vessel has now been invented, capable of carrying men some distance under water. Any bodies, however, can easily be suspended under some such vessel as we have mentioned, which has occasioned our remarks upon the experiment.

Another advantage of the careful and hermetical closing of bodies is this — not only the admission of external air is prevented (of which we have treated), but the spirit of bodies also is prevented from making its escape, which is an internal operation. For any one operating on natural bodies must be certain as to their quantity, and that nothing has evaporated or escaped, since profound alterations take place in bodies, when art prevents the loss or escape of any portion, while nature prevents their annihilation. With regard to this circumstance, a false idea has prevailed (which if true would make us despair of preserving quantity without diminution), namely, that the spirit of bodies, and air when rarefied by a great degree of heat, cannot be so kept in by being inclosed in any vessel as not to escape by the small pores. Men are led into this idea by the common experiments of a cup inverted over water, with a candle or piece of lighted paper in it, by which the water is drawn up, and of those cups which, when heated, draw up the flesh. For they think that in each experiment the rarefied air escapes, and that its quantity is therefore diminished, by which means the water or flesh rises by the motion of connection. This is, however, most incorrect. For the air is not diminished in quantity, but contracted in dimensions,[161] nor does this motion of the rising of the water begin till the flame is extinguished, or the air cooled, so that physicians place cold sponges, moistened with water, on the cups, in order to increase their attraction. There is, therefore, no reason why men should fear much from the ready escape of air: for although it be true that the most solid bodies have their pores, yet neither air, nor

spirit, readily suffers itself to be rarefied to such an extreme degree; just as water will not escape by a small chink.

2. With regard to the second of the seven above-mentioned methods, we must especially observe, that compression and similar violence have a most powerful effect either in producing locomotion, and other motions of the same nature, as may be observed in engines and projectiles, or in destroying the organic body, and those qualities, which consist entirely in motion (for all life, and every description of flame and ignition are destroyed by compression, which also injures and deranges every machine); or in destroying those qualities which consist in position and a coarse difference of parts, as in colors; for the color of a flower when whole, differs from that it presents when bruised, and the same may be observed of whole and powdered amber; or in tastes, for the taste of a pear before it is ripe, and of the same pear when bruised and softened, is different, since it becomes perceptibly more sweet. But such violence is of little avail in the more noble transformations and changes of homogeneous bodies, for they do not, by such means, acquire any constantly and permanently new state, but one that is transitory, and always struggling to return to its former habit and freedom. It would not, however, be useless to make some more diligent experiments with regard to this; whether, for instance, the condensation of a perfectly homogeneous body (such as air, water, oil, and the like) or their rarefaction, when effected by violence, can become permanent, fixed, and, as it were, so changed, as to become a nature. This might at first be tried by simple perseverance, and then by means of helps and harmonies. It might readily have been attempted (if we had but thought of it), when we condensed water (as was mentioned above), by hammering and compression, until it burst out. For we ought to have left the flattened globe untouched for some days, and then to have drawn off the water, in order to try whether it would have immediately occupied the same dimensions as it did before the condensation. If it had not done so, either immediately, or soon afterward, the condensation would have appeared to have been rendered constant; if not, it would have appeared that a restitution took place, and that the condensation had been transitory. Something of the same

kind might have been tried with the glass eggs; the egg should have been sealed up suddenly and firmly, after a complete exhaustion of the air, and should have been allowed to remain so for some days, and it might then have been tried whether, on opening the aperture, the air would be drawn in with a hissing noise, or whether as much water would be drawn into it when immersed, as would have been drawn into it at first, if it had not continued sealed. For it is probable (or, at least, worth making the experiment) that this might have happened, or might happen, because perseverance has a similar effect upon bodies which are a little less homogeneous. A stick bent together for some time does not rebound, which is not owing to any loss of quantity in the wood during the time, for the same would occur (after a larger time) in a plate of steel, which does not evaporate. If the experiment of simple perseverance should fail, the matter should not be given up, but other means should be employed. For it would be no small advantage, if bodies could be endued with fixed and constant natures by violence. Air could then be converted into water by condensation, with other similar effects; for man is more the master of violent motions than of any other means.

3. The third of our seven methods is referred to that great practical engine of nature, as well as of art, cold and heat. Here, man's power limps, as it were, with one leg. For we possess the heat of fire, which is infinitely more powerful and intense than that of the sun (as it reaches us), and that of animals. But we want cold,[162] except such as we can obtain in winter, in caverns, or by surrounding objects with snow and ice, which, perhaps, may be compared in degree with the noontide heat of the sun in tropical countries, increased by the reflection of mountains and walls. For this degree of heat and cold can be borne for a short period only by animals, yet it is nothing compared with the heat of a burning furnace, or the corresponding degree of cold.[163] Everything with us has a tendency to become rarefied, dry and wasted, and nothing to become condensed or soft, except by mixtures, and, as it were, spurious methods. Instances of cold, therefore, should be searched for most diligently, such as may be found by exposing bodies upon buildings in a hard frost, in subterraneous caverns, by

surrounding bodies with snow and ice in deep places excavated for that purpose, by letting bodies down into wells, by burying bodies in quicksilver and metals, by immersing them in streams which petrify wood, by burying them in the earth (which the Chinese are reported to do with their china, masses of which, made for that purpose, are said to remain in the ground for forty or fifty years, and to be transmitted to their heirs as a sort of artificial mine) and the like. The condensations which take place in nature, by means of cold, should also be investigated, that by learning their causes, they may be introduced into the arts; such as are observed in the exudation of marble and stones, in the dew upon the panes of glass in a room toward morning after a frosty night, in the formation and the gathering of vapors under the earth into water, whence spring fountains and the like.

Besides the substances which are cold to the touch, there are others which have also the effect of cold, and condense; they appear, however, to act only upon the bodies of animals, and scarcely any further. Of these we have many instances, in medicines and plasters. Some condense the flesh and tangible parts, such as astringent and inspissating medicines, others the spirits, such as soporifics. There are two modes of condensing the spirits, by soporifics or provocatives to sleep; the one by calming the motion, the other by expelling the spirit. The violet, dried roses, lettuces, and other benign or mild remedies, by their friendly and gently cooling vapors, invite the spirits to unite, and restrain their violent and perturbed motion. Rose-water, for instance, applied to the nostrils in fainting fits, causes the resolved and relaxed spirits to recover themselves, and, as it were, cherishes them. But opiates, and the like, banish the spirits by their malignant and hostile quality. If they be applied, therefore, externally, the spirits immediately quit the part and no longer readily flow into it; but if they be taken internally, their vapor, mounting to the head, expels, in all directions, the spirits contained in the ventricles of the brain, and since these spirits retreat, but cannot escape, they consequently meet and are condensed, and are sometimes completely extinguished and suffocated; although the same opiates, when taken in moderation, by a secondary accident (the condensation

which succeeds their union), strengthen the spirits, render them more robust, and check their useless and inflammatory motion, by which means they contribute not a little to the cure of diseases, and the prolongation of life.

The preparations of bodies, also, for the reception of cold should not be omitted, such as that water a little warmed is more easily frozen than that which is quite cold, and the like.

Moreover, since nature supplies cold so sparingly, we must act like the apothecaries, who, when they cannot obtain any simple ingredient, take a succedaneum, or *quid pro quo*, as they term it, such as aloes for xylobalsamum, cassia for cinnamon. In the same manner we should look diligently about us, to ascertain whether there may be any substitutes for cold, that is to say, in what other manner condensation can be effected, which is the peculiar operation of cold. Such condensations appear hitherto to be of four kinds only. 1. By simple compression, which is of little avail toward permanent condensation, on account of the elasticity of substances, but may still, however, be of some assistance. 2. By the contraction of the coarser, after the escape or departure of the finer parts of a given body; as is exemplified in induration by fire, and the repeated heating and extinguishing of metals, and the like. 3. By the cohesion of the most solid homogeneous parts of a given body, which were previously separated, and mixed with others less solid, as in the return of sublimated mercury to its simple state, in which it occupies much less space than it did in powder, and the same may be observed of the cleansing of all metals from their dross. 4. By harmony, or the application of substances which condense by some latent power. These harmonies are as yet but rarely observed, at which we cannot be surprised, since there is little to hope for from their investigation, unless the discovery of forms and confirmation be attained. With regard to animal bodies, it is not to be questioned that there are many internal and external medicines which condense by harmony, as we have before observed, but this action is rare in inanimate bodies. Written accounts, as well as report, have certainly spoken of a tree in one of the Tercera or Canary Islands (for I do not exactly recollect which) that drips perpetually, so as to supply the inhabitants, in some degree, with water; and

Paracelsus says that the herb called *ros solis* is filled with dew at noon, while the sun gives out its greatest heat, and all other herbs around it are dry. We treat both these accounts as fables; they would, however, if true, be of the most important service, and most worthy of examination. As to the honey-dew, resembling manna, which is found in May on the leaves of the oak, we are of opinion that it is not condensed by any harmony or peculiarity of the oak leaf, but that while it falls equally upon other leaves it is retained and continues on those of the oak, because their texture is closer, and not so porous as that of most of the other leaves. [164]

With regard to heat, man possesses abundant means and power; but his observation and inquiry are defective in some respects, and those of the greatest importance, notwithstanding the boasting of quacks. For the effects of intense heat are examined and observed, while those of a more gentle degree of heat, being of the most frequent occurrence in the paths of nature, are, on that very account, least known. We see, therefore, the furnaces, which are most esteemed, employed in increasing the spirits of bodies to a great extent, as in the strong acids, and some chemical oils; while the tangible parts are hardened, and, when the volatile part has escaped, become sometimes fixed; the homogeneous parts are separated, and the heterogeneous incorporated and agglomerated in a coarse lump; and (what is chiefly worthy of remark) the junction of compound bodies, and the more delicate conformations are destroyed and confounded. But the operation of a less violent heat should be tried and investigated, by which more delicate mixtures and regular conformations may be produced and elicited, according to the example of nature, and in imitation of the effect of the sun, which we have alluded to in the aphorism on the instances of alliance. For the works of nature are carried on in much smaller portions, and in more delicate and varied positions than those of fire, as we now employ it. But man will then appear to have really augmented his power, when the works of nature can be imitated in species, perfected in power, and varied in quantity; to which should be added the acceleration in point of time. Rust, for instance, is the result of a long process, but *crocus martis* is obtained immediately; and the same may be

observed of natural verdigris and ceruse. Crystal is formed slowly, while glass is blown immediately: stones increase slowly, while bricks are baked immediately, *etc.* In the meantime (with regard to our present subject) every different species of heat should, with its peculiar effects, be diligently collected and inquired into; that of the heavenly bodies, whether their rays be direct, reflected, or refracted, or condensed by a burning-glass; that of lightning, flame, and ignited charcoal; that of fire of different materials, either open or confined, straitened or overflowing, qualified by the different forms of the furnaces, excited by the bellows, or quiescent, removed to a greater or less distance, or passing through different media; moist heats, such as the *balneum Mariæ*, and the dunghill; the external and internal heat of animals; dry heats, such as the heat of ashes, lime, warm sand; in short, the nature of every kind of heat, and its degrees.

We should, however, particularly attend to the investigation and discovery of the effects and operations of heat, when made to approach and retire by degrees, regularly, periodically, and by proper intervals of space and time. For this systematical inequality is in truth the daughter of heaven and mother of generation, nor can any great result be expected from a vehement, precipitate, or desultory heat. For this is not only most evident in vegetables, but in the wombs of animals also there arises a great inequality of heat, from the motion, sleep, food, and passions of the female. The same inequality prevails in those subterraneous beds where metals and fossils are perpetually forming, which renders yet more remarkable the ignorance of some of the reformed alchemists, who imagined they could attain their object by the equable heat of lamps, or the like, burning uniformly. Let this suffice concerning the operation and effects of heat; nor is it time for us to investigate them thoroughly before the forms and conformations of bodies have been further examined and brought to light. When we have determined upon our models, we may seek, apply, and arrange our instruments.

4. The fourth mode of action is by continuance, the very steward and almoner, as it were, of nature. We apply the term continuance to the abandonment of a body to itself for an observable time, guarded and protected in

the meanwhile from all external force. For the internal motion then commences to betray and exert itself when the external and adventitious is removed. The effects of time, however, are far more delicate than those of fire. Wine, for instance, cannot be clarified by fire as it is by continuance. Nor are the ashes produced by combustion so fine as the particles dissolved or wasted by the lapse of ages. The incorporations and mixtures, which are hurried by fire, are very inferior to those obtained by continuance; and the various conformations assumed by bodies left to themselves, such as mouldiness, etc., are put a stop to by fire or a strong heat. It is not, in the meantime, unimportant to remark that there is a certain degree of violence in the motion of bodies entirely confined; for the confinement impedes the proper motion of the body. Continuance in an open vessel, therefore, is useful for separations, and in one hermetically sealed for mixtures, that in a vessel partly closed, but admitting the air, for putrefaction. But instances of the operation and effect of continuance must be collected diligently from every quarter.

5. The direction of motion (which is the fifth method of action) is of no small use. We adopt this term, when speaking of a body which, meeting with another, either arrests, repels, allows, or directs its original motion. This is the case principally in the figure and position of vessels. An upright cone, for instance, promotes the condensation of vapor in alembics, but when reversed, as in inverted vessels, it assists the refining of sugar. Sometimes a curved form, or one alternately contracted and dilated, is required. Strainers may be ranged under this head, where the opposed body opens a way for one portion of another substance and impedes the rest. Nor is this process or any other direction of motion carried on externally only, but sometimes by one body within another. Thus, pebbles are thrown into water to collect the muddy particles, and syrups are refined by the white of an egg, which glues the grosser particles together so as to facilitate their removal. Telesius, indeed, rashly and ignorantly enough attributes the formation of animals to this cause, by means of the channels and folds of the womb. He ought to have observed a similar formation of the young in eggs which have no

wrinkles or inequalities. One may observe a real result of this direction of motion in casting and modelling.

6. The effects produced by harmony and aversion (which is the sixth method) are frequently buried in obscurity; for these occult and specific properties (as they are termed), the sympathies and antipathies, are for the most part but a corruption of philosophy. Nor can we form any great expectation of the discovery of the harmony which exists between natural objects, before that of their forms and simple conformations, for it is nothing more than the symmetry between these forms and conformations.

The greater and more universal species of harmony are not, however, so wholly obscure, and with them, therefore, we must commence. The first and principal distinction between them is this; that some bodies differ considerably in the abundance and rarity of their substance, but correspond in their conformation; others, on the contrary, correspond in the former and differ in the latter. Thus the chemists have well observed, that in their trial of first principles sulphur and mercury, as it were, pervade the universe; their reasoning about salt, however, is absurd, and merely introduced to comprise earthy dry fixed bodies. In the other two, indeed, one of the most universal species of natural harmony manifests itself. Thus there is a correspondence between sulphur, oil, greasy exhalations, flame, and, perhaps, the substance of the stars. On the other hand, there is a like correspondence between mercury, water, aqueous vapor, air, and, perhaps, pure inter-sidereal ether. Yet do these two quaternions, or great natural tribes (each within its own limits), differ immensely in quantity and density of substance, while they generally agree in conformation, as is manifest in many instances. On the other hand, the metals agree in such quantity and density (especially when compared with vegetables, etc.), but differ in many respects in conformation. Animals and vegetables, in like manner, vary in their almost infinite modes of conformation, but range within very limited degrees of quantity and density of substance.

The next most general correspondence is that between individual bodies and those which supply them by way of menstruum or support. Inquiry, therefore,

must be made as to the climate, soil, and depth at which each metal is generated, and the same of gems, whether produced in rocks or mines, also as to the soil in which particular trees, shrubs, and herbs, mostly grow and, as it were, delight; and as to the best species of manure, whether dung, chalk, sea sand, or ashes, etc., and their different propriety and advantage according to the variety of soils. So also the grafting and setting of trees and plants (as regards the readiness of grafting one particular species on another) depends very much upon harmony, and it would be amusing to try an experiment I have lately heard of, in grafting forest trees (garden trees alone having hitherto been adopted), by which means the leaves and fruit are enlarged, and the trees produce more shade. The specific food of animals again should be observed, as well as that which cannot be used. Thus the carnivorous cannot be fed on herbs, for which reason the order of feuilletans, the experiment having been made, has nearly vanished; human nature being incapable of supporting their regimen, although the human will has more power over the bodily frame than that of other animals. The different kinds of putrefaction from which animals are generated should be noted.

The harmony of principal bodies with those subordinate to them (such indeed may be deemed those we have alluded to above) are sufficiently manifest, to which may be added those that exist between different bodies and their objects, and, since these latter are more apparent, they may throw great light when well observed and diligently examined upon those which are more latent.

The more internal harmony and aversion, or friendship and enmity (for superstition and folly have rendered the terms of sympathy and antipathy almost disgusting), have been either falsely assigned, or mixed with fable, or most rarely discovered from neglect. For if one were to allege that there is an enmity between the vine and the cabbage, because they will not come up well when sown together, there is a sufficient reason for it in the succulent and absorbent nature of each plant, so that the one defrauds the other. Again, if one were to say that there is a harmony and friendship between the corn and the corn-flower, or the wild poppy, because the latter seldom grow anywhere but in cultivated soils, he ought rather to say, there is an enmity between them, for the poppy and the

corn-flower are produced and created by those juices which the corn has left and rejected, so that the sowing of the corn prepares the ground for their production. And there are a vast number of similar false assertions. As for fables, they must be totally exterminated. There remains, then, but a scanty supply of such species of harmony as has borne the test of experiment, such as that between the magnet and iron, gold and quicksilver, and the like. In chemical experiments on metals, however, there are some others worthy of notice, but the greatest abundance (where the whole are so few in numbers) is discovered in certain medicines, which, from their occult and specific qualities (as they are termed), affect particular limbs, humors, diseases, or constitutions. Nor should we omit the harmony between the motion and phenomena of the moon, and their effects on lower bodies, which may be brought together by an accurate and honest selection from the experiments of agriculture, navigation, and medicine, or of other sciences. By as much as these general instances, however, of more latent harmony, are rare, with so much the more diligence are they to be inquired after, through tradition, and faithful and honest reports, but without rashness and credulity, with an anxious and, as it were, hesitating degree of reliance. There remains one species of harmony which, though simple in its mode of action, is yet most valuable in its use, and must by no means be omitted, but rather diligently investigated. It is the ready or difficult coition or union of bodies in composition, or simple juxtaposition. For some bodies readily and willingly mix, and are incorporated, others tardily and perversely; thus powders mix best with water, chalk and ashes with oils, and the like. Nor are these instances of readiness and aversion to mixture to be alone collected, but others, also, of the collocation, distribution, and digestion of the parts when mingled, and the predominance after the mixture is complete.

7. Lastly, there remains the seventh, and last of the seven, modes of action; namely, that by the alternation and interchange of the other six; but of this, it will not be the right time to offer any examples, until some deeper investigation shall have taken place of each of the others. The series, or chain of this alternation, in its mode of application to separate effects, is no less powerful in

its operation than difficult to be traced. But men are possessed with the most extreme impatience, both of such inquiries, and their practical application, although it be the clew of the labyrinth in all greater works. Thus far of the generally useful instances.

LI. The twenty-seventh and last place we will assign to the magical instances, a term which we apply to those where the matter or efficient agent is scanty or small, in comparison with the grandeur of the work or effect produced; so that even when common they appear miraculous, some at first sight, others even upon more attentive observation. Nature, however, of herself, supplies these but sparingly. What she will do when her whole store is thrown open, and after the discovery of forms, processes, and conformation, will appear hereafter. As far as we can yet conjecture, these magic effects are produced in three ways, either by self-multiplication, as in fire, and the poisons termed specific, and the motions transferred and multiplied from wheel to wheel; or by the excitement, or, as it were, invitation of another substance, as in the magnet, which excites innumerable needles without losing or diminishing its power; and again in leaven, and the like; or by the excess of rapidity of one species of motion over another, as has been observed in the case of gunpowder, cannon, and mines. The two former require an investigation of harmonies, the latter of a measure of motion. Whether there be any mode of changing bodies *per minima* (as it is termed), and transferring the delicate conformations of matter, which is of importance in all transformations of bodies, so as to enable art to effect, in a short time, that which nature works out by divers expedients, is a point of which we have as yet no indication. But, as we aspire to the extremest and highest results in that which is solid and true, so do we ever detest, and, as far as in us lies, expel all that is empty and vain.

LII. Let this suffice as to the respective dignity of prerogatives of instances. But it must be noted, that in this our organ, we treat of logic, and not of philosophy. Seeing, however, that our logic instructs and informs the understanding, in order that it may not, with the small hooks, as it were, of the mind, catch at, and grasp mere abstractions, but rather actually penetrate nature,

and discover the properties and effects of bodies, and the determinate laws of their substance (so that this science of ours springs from the nature of things, as well as from that of the mind); it is not to be wondered at, if it have been continually interspersed and illustrated with natural observations and experiments, as instances of our method. The prerogative instances are, as appears from what has preceded, twenty-seven in number, and are termed, solitary instances, migrating instances, conspicuous instances, clandestine instances, constitutive instances, similar instances, singular instances, deviating instances, bordering instances, instances of power, accompanying and hostile instances, subjunctive instances, instances of alliance, instances of the cross, instances of divorce, instances of the gate, citing instances, instances of the road, supplementary instances, lancing instances, instances of the rod, instances of the course, doses of nature, wrestling instances, suggesting instances, generally useful instances, and magical instances. The advantage, by which these instances excel the more ordinary, regards specifically either theory or practice, or both. With regard to theory, they assist either the senses or the understanding; the senses, as in the five instances of the lamp; the understanding, either by expediting the exclusive mode of arriving at the form, as in solitary instances, or by confining, and more immediately indicating the affirmative, as in the migrating, conspicuous, accompanying, and subjunctive instances; or by elevating the understanding, and leading it to general and common natures, and that either immediately, as in the clandestine and singular instances, and those of alliance; or very nearly so, as in the constitutive; or still less so, as in the similar instances; or by correcting the understanding of its habits, as in the deviating instances; or by leading to the grand form or fabric of the universe, as in the bordering instances; or by guarding it from false forms and causes, as in those of the cross and of divorce. With regard to practice, they either point it out, or measure, or elevate it. They point it out, either by showing where we must commence in order not to repeat the labors of others, as in the instances of power; or by inducing us to aspire to that which may be possible, as in the

suggesting instances; the four mathematical instances measure it. The generally useful and the magical elevate it.

Again, out of these twenty-seven instances, some must be collected immediately, without waiting for a particular investigation of properties. Such are the similar, singular, deviating, and bordering instances, those of power, and of the gate, and suggesting, generally useful, and magical instances; for these either assist and cure the understanding and senses, or furnish our general practice. The remainder are to be collected when we finish our synoptical tables for the work of the interpreter, upon any particular nature; for these instances, honored and gifted with such prerogatives, are like the soul amid the vulgar crowd of instances, and (as we from the first observed) a few of them are worth a multitude of the others. When, therefore, we are forming our tables they must be searched out with the greatest zeal, and placed in the table. And, since mention must be made of them in what follows, a treatise upon their nature has necessarily been prefixed. We must next, however, proceed to the supports and corrections of induction, and thence to concretes, the latent process, and latent conformations, and the other matters, which we have enumerated in their order in the twenty-first aphorism, in order that, like good and faithful guardians, we may yield up their fortune to mankind upon the emancipation and majority of their understanding; from which must necessarily follow an improvement of their estate, and an increase of their power over nature. For man, by the fall, lost at once his state of innocence, and his empire over creation, both of which can be partially recovered even in this life, the first by religion and faith, the second by the arts and sciences. For creation did not become entirely and utterly rebellious by the curse, but in consequence of the Divine decree, “in the sweat of thy brow shalt thou eat bread,” she is compelled by our labors (not assuredly by our disputes or magical ceremonies), at length, to afford mankind in some degree his bread, that is to say, to supply man’s daily wants.

END OF “NOVUM ORGANUM”

ENDNOTES.

[71] Τὸ τὶ ἦν εἶναι, or ἦν οὐσία of Aristotle. — See lib. iii. Metap.

[72] These divisions are from Aristotle's Metaphysics, where they are termed, 1. ὕλη ἢ τὸ ὑποκείμενον. 2. τὸ τὶ ἦν εἶναι. 3. ὅθεν ἡ ἀρχὴ τῆς κινήσεως. 4. τὸ οὗ ἕνεκεν — καὶ τὸ ἀγαθόν.

[73] See Aphorism li. and second paragraph of Aphorism lxv. in the first book.

[74] Bacon means, that although there exist in nature only individualities, yet a certain number of these may have common properties, and be controlled by the same laws. Now, these homogeneous qualities which distinguish them from other individuals, lead us to class them under one expression, and sometimes under a single term. Yet these classes are only pure conceptions in Bacon's opinion, and cannot be taken for distinct substances. He evidently here aims a blow at the Realists, who concluded that the essence which united individualities in a class was the only real and immutable existence in nature, inasmuch as it entered into their ideas of individual substances as a distinct and essential property, and continued in the mind as the mold, type or pattern of the class, while its individual forms were undergoing perpetual renovation and decay. — *Ed.*

[75] Bacon's definition is obscure. All the idea we have of a law of nature consists in invariable sequence between certain classes of phenomena; but this cannot be the complete sense attached by Bacon to the term form, as he employs it in the fourth aphorism as convertible with the nature of any object; and again, in the first aphorism, as the *natura naturans*, or general law or condition in any substance or quality — *natura naturata* — which is whatever its form is, or that particular combination of forces which impresses a certain nature upon matter subject to its influence. Thus, in the Newtonian sense, the form of whiteness would be that combination of the seven primitive rays of light which give rise to that color. In combination with this word, and affording a still further insight into its meaning, we have the phrases, *latens processus ad formam, et latens schematismus corporum*. Now, the *latens schematismus* signifies the internal texture, structure, or configuration of bodies, or the result of the respective situation of all the parts of a body; while the *latens processus ad formam* points out the gradation of movements which takes place among the molecula of bodies when they either conserve or change their figure. Hence we may consider the form of any quality in body as something convertible with that quality, *i.e.*, when it exists the quality is present, and *vice versâ*. In this sense, the form of a thing differs only from its efficient cause in being permanent, whereas we apply cause to that which exists in order of time. The *latens processus* and *latens schematismus* are subordinate to form, as concrete exemplifications of its essence. The former is the secret and invisible process by which change is effected, and involves the principle since called the law of continuity. Thus, the succession of events between the application of the match to the expulsion of the bullet is an instance of latent progress which we can now trace with some degree of accuracy. It also more directly refers to the operation by which one form or condition of being is induced upon another. For example, when the surface of iron becomes rusty, or when water is converted into steam, some change has taken place, or latent process from one form to another. Mechanics afford many exemplifications of the first latent process we have denoted, and chemistry of the second. The *latens schematismus* is that visible structure of bodies on

which so many of their properties depend. When we inquire into the constitution of crystals, and into the internal structure of plants, we are examining into their latent schematism. — *Ed.*

[76] By the recent discoveries in electric magnetism, copper wires, or, indeed, wires of any metal, may be transformed into magnets; the magnetic law, or form, having been to that extent discovered.

[77] Haller has pursued this investigation in his "Physiology," and has left his successors little else to do than repeat his discoveries. — *Ed.*

[78] Bacon here first seems pregnant with the important development of the higher calculus, which, in the hands of Newton and Descartes, was to effect as great a revolution in philosophy as his method. — *Ed.*

[79] By spirit, Bacon here plainly implies material fluid too fine to be grasped by the unassisted sense, which rather operates than reasons. We sometimes adopt the same mode of expression, as in the words spirits of nitre, spirits of wine. Some such agency has been assumed by nearly all the modern physicists, a few of whom, along with Bacon, would leave us to gather from their expressions, that they believe such bodies endowed with the sentient powers of perception. As another specimen of his sentiment on this subject, we may refer to a paragraph on the decomposition of compounds, in his essay on death, beginning— "The spirit which exists in all living bodies, keeps all the parts in due subjection; when it escapes, the body decomposes, or the similar parts unite." — *Ed.*

[80] The theory of the Epicureans and others. The atoms are supposed to be invisible, unalterable particles, endued with all the properties of the given body, and forming that body by their union. They must be separated, of course, which either takes a vacuum for granted, or introduces a tertium quid into the composition of the body.

[81] Compare the three following aphorisms with the last three chapters of the third book of the "De Augmentis Scientiarum."

[82] Bacon gives this unfortunate term its proper signification; μετα, in composition, with the Greeks signifying change or mutation. Most of our readers, no doubt, are aware that the obtrusion of this word into technical philosophy was purely capricious, and is of no older date than the publication of Aristotle's works by Andronicus of Rhodes, one of the learned men into whose hands the manuscripts of that philosopher fell, after they were brought by Sylla from Athens to Rome. To fourteen books in these MSS. with no distinguishing title, Andronicus is said to have prefixed the words τα μετα τα φυσικα, to denote the place which they ought to hold either in the order of Aristotle's arrangement, or in that of study. These books treat first of those subjects which are common to matter and mind; secondly, of things separate from matter, *i.e.* of God, and of the subordinate spirits, which were supposed by the Peripatetics to watch over particular portions of the universe. The followers of Aristotle accepted the whimsical title of Andronicus, and in their usual manner allowed a word to unite things into one science which were plainly heterogeneous. Their error

was adopted by the Peripatetics of the Christian Church. The schoolmen added to the notion of ontology, the science of the mind, or pneumatology, and as that genus of being has since become extinct with the schools, metaphysics thus in modern parlance comes to be synonymous with psychology. It were to be wished that Bacon's definition of the term had been accepted, and mental science delivered from one of the greatest monstrosities in its nomenclature, yet Bacon whimsically enough in his De Augmentis includes mathematics in metaphysics. — *Ed.*

83

"Ne tenues pluviæ, rapidive potentia solis Acrior, aut Boreæ penetrabile frigus adurat."

— Virg. Georg. i. 92, 93.

84 This notion, which he repeats again, and particularizes in the 18th aph. of this book, is borrowed from the ancients, and we need not say is as wise as their other astronomical conjectures. The sun also approaches stars quite as large in other quarters of the zodiac, when it looks down upon the earth through the murky clouds of winter. When that luminary is in Leo, the heat of the earth is certainly greater than at any other period, but this arises from the accumulation of heat after the solstice, for the same reason that the maximum heat of the day is at two o'clock instead of noon. — *Ed.*

85 Bouguer, employed by Louis XIV. in philosophical researches, ascended the Andes to discover the globular form of the earth, and published an account of his passage, which verifies the statement of Bacon.

86 Montanari asserts in his book against the astrologers that he had satisfied himself by numerous and oft-repeated experiments, that the lunar rays gathered to a focus produced a sensible degree of heat. Muschenbröck, however, adopts the opposite opinion, and asserts that himself, De la Hire, Villet, and Tschirnhausen had tried with that view the strongest burning-glasses in vain. (Opera de Igne.) De la Lande makes a similar confession in his Astronomy (vol. ii. vii. § 1413). Bouguer, whom we have just quoted, demonstrated that the light of the moon was 300,000 degrees less than that of the sun; it would consequently be necessary to invent a glass with an absorbing power 300,000 degrees greater than those ordinarily in use, to try the experiment Bacon speaks of. — *Ed.*

87 In this thermometer, mercury was not dilated by heat or contracted by cold, as the one now in use, but a mass of air employed instead, which filled the cavity of the bulb. This being placed in an inverted position to ours, that is to say, with the bulb uppermost, pressed down the liquor when the air became dilated by heat, as ours press it upward; and when the heat diminished, the liquor rose to occupy the place vacated by the air, as the one now in use descends. It consequently was liable to be affected by a change in the temperature, as by the weight of air, and could afford only a rude standard of accuracy in scientific investigations. This thermometer was not Bacon's own contrivance, as is commonly supposed, but that of Drebbel. — *Ed.*

[88] La Lande is indignant that the Chaldeans should have more correct notions of the nature of comets than the modern physicists, and charges Bacon with entertaining the idea that they were the mere effects of vapor and heat. This passage, with two others more positive, in the “De Aug.” (cap. xl.) and the “Descript. Globi Intellect.” (cap. vi.) certainly afford ground for the assertion; but if Bacon erred, he erred with Galileo, and with the foremost spirits of the times. It is true that Pythagoras and Seneca had asserted their belief in the solidity of these bodies, but the wide dominion which Aristotle subsequently exercised, threw their opinions into the shade, and made the opposite doctrine everywhere paramount. — *Ed.*

[89] Was it a silk apron which exhibited electric sparks? Silk was then scarce.

[90] The Italian fire-fly.

[91] This last is found to be the real reason, air not being a good conductor, and therefore not allowing the escape of heat. The confined air is disengaged when these substances are placed under an exhausted receiver.

[92] This is erroneous. Air, in fact, is one of the worst, and metals are the best conductors of heat.

[93] See No. 28 in the table of the degrees of heat.

[94] Bacon here mistakes sensation confined to ourselves for an internal property of distinct substances. Metals are denser than wood, and our bodies consequently coming into contact with more particles of matter when we touch them, lose a greater quantity of heat than in the case of lighter substances. — *Ed.*

[95] This was the ancient opinion, but the moderns incline to the belief that these insects are produced by generation or fecundity from seeds deposited by their tribes in bodies on the verge of putrefaction. — *Ed.*

[96] The correct measure of the activity of flame may be obtained by multiplying its natural force into the square of its velocity. On this account the flame of vivid lightning mentioned in No. 23 contains so much vigor, its velocity being greater than that arising from other heat. — *Ed.*

[97] The fires supply fresh heat, the water has only a certain quantity of heat, which being diffused over a fresh supply of cooler water, must be on the whole lowered.

[98] If condensation were the cause of the greater heat, Bacon concludes the centre of the flame would be the hotter part, and *vice versâ*. The fact is, neither of the causes assigned by Bacon is the true one; for the fire burns more quickly only because the draught of air is more rapid, the cold dense air pressing rapidly into the heated room and toward the chimney. — *Ed.*

[99] Bacon appears to have confounded combustibility and fusibility with susceptibility of heat; for though the metals will certainly neither dissolve as soon as ice or butter, nor be consumed as soon as wood, that only shows that different degrees of heat are required to produce similar effects on different bodies; but metals much more readily acquire and transmit the same degree of heat than any of the above substances. The rapid transmission renders them generally cold to the touch. The convenience of fixing wooden handles to vessels containing hot water illustrates these observations.

[100] Another singular error, the truth being, that solid bodies are the best conductors; but of course where heat is diffused over a large mass, it is less in each part, than if that part alone absorbed the whole quantum of heat. — *Ed.*

[101] This general law or form has been well illustrated by Newton's discovery of the decomposition of colors.

[102] *I.e.*, the common link or form which connects the various kinds of natures, such as the different hot or red natures enumerated above. — See Aphorism iii. part 2.

[103] This is erroneous — all metals expand considerably when heated.

[104] "Quid ipsum," the τὸ τὶ ἦν εἶναι of Aristotle.

[105] To show the error of the text, we need only mention the case of water, which, when confined in corked vases, and exposed to the action of a freezing atmosphere, is sure to swell out and break those vessels which are not sufficiently large to contain its expanded volume. Megalotti narrates a hundred other instances of a similar character. — *Ed.*

[106] Bacon's inquisition into the nature of heat, as an example of the mode of interpreting nature, cannot be looked upon otherwise than as a complete failure. Though the exact nature of this phenomenon is still an obscure and controverted matter, the science of thermotics now consists of many important truths, and to none of these truths is there so much as an approximation in Bacon's process. The steps by which this science really advanced were the discovery of a measure of a heat or temperature, the establishment of the laws of conduction and radiation, of the laws of specific heat, latent heat, and the like. Such advances have led to Ampère's hypothesis, that heat consists in the vibrations of an imponderable fluid; and to Laplace's theory, that temperature consists in the internal radiation of a similar medium. These hypotheses cannot yet be said to be even probable, but at least they are so modified as to include some of the preceding laws which are firmly established, whereas Bacon's "form," or true definition of heat, as stated in the text, includes no laws of phenomena, explains no process, and is indeed itself an example of illicit generalization.

In all the details of his example of heat he is unfortunate. He includes in his collection of instances, the *hot* tastes of aromatic plants, the caustic effects of acids, and many other facts which cannot be ascribed to heat without a studious laxity in the use of the word. — *Ed.*

[107] By this term Bacon understands general phenomena, taken in order from the great mass of indiscriminative facts, which, as they lie in nature, are apt to generate confusion by their number, indistinctness and complication. Such classes of phenomena, as being peculiarly suggestive of causation, he quaintly classes under the title of prerogative inquiries, either seduced by the fanciful analogy, which such instances bore to the *prerogativa centuria* in the Roman Comitia, or justly considering them as Herschel supposes to hold a kind of prerogative dignity from being peculiarly suggestive of causation.

Two high authorities in physical science (v. Herschel, Nat. Phil., art. 192; Whewell's Philosophy of the Inductive Sciences, vol. ii. p. 243) pronounce these instances of little service in the task of induction, being for the most part classed not according to the ideas which they involve, or to any obvious circumstance in the facts of which they consist, but according to the extent and manner of their influence upon the inquiry in which they are employed. Thus we have solitary instances, migrating instances, ostensive instances, clandestine instances, so termed according to the degree in which they exhibit, or seem to exhibit, the property, whose nature we would examine. We have guide-post instances, crucial instances, instances of the parted road, of the doorway, of the lamp, according to the guidance they supply to our advance. Whewell remarks that such a classification is much of the same nature as if, having to teach the art of building, we were to describe tools with reference to the amount and place of the work which they must do, instead of pointing out their construction and use; as if we were to inform the pupil that we must have tools for lifting a stone up, tools for moving it sidewise, tools for laying it square, and tools for cementing it firmly. The means are thus lost in the end, and we reap the fruits of unmethodical arrangement in the confusion of cross division. In addition, all the instances are leavened with the error of confounding the laws with the causes of phenomena, and we are urged to adopt the fundamental error of seeking therein the universal agents, or general causes of phenomena, without ascending the gradual steps of intermediate laws. — *Ed.*

[108] Of these nine general heads no more than the first is prosecuted by the author.

[109] This very nearly approaches to Sir I. Newton's discovery of the decomposition of light by the prism.

[110] The mineral kingdom, as displaying the same nature in all its gradations, from the shells so perfect in structure in limestone to the finer marbles in which their nature gradually disappears, is the great theatre for instances of migration. — *Ed.*

[111] Bacon was not aware of the fact since brought to light by Römer, that down to fourteen fathoms from the earth's mean level the thermometer remains fixed at the tenth degree, but that as the thermometer descends below that depth the heat increases in a ratio proportionate to the descent, which happens with little variation in all climates. Buffon considers this a proof of a central fire in our planet. — *Ed.*

[112] All the diversities of bodies depend upon two principles, *i.e.*, the quantity and the position of the elements that enter into their composition. The primary difference is not that which depends on the greatest or least quantity of material elements, but that which depends on their position. It was the quick perception of this truth that made Leibnitz say that to complete mathematics it was necessary to join to the analysis of quantity the analysis of position. — *Ed.*

[113] Query?

[114] The real cause of this phenomenon is the attraction of the surface-water in the vessel by the sides of the bubbles. When the bubbles approach, the sides nearest each other both tend to raise the small space of water between them, and consequently less water is raised by each of these nearer sides than by the exterior part of the bubble, and the greater weight of the water raised on the exterior parts pushes the bubbles together. In the same manner a bubble near the side of a vessel is pushed toward it; the vessel and bubble both drawing the water that is between them. The latter phenomenon cannot be explained on Bacon's hypothesis.

[115] Modern discoveries appear to bear out the sagacity of Bacon's remark, and the experiments of Baron Cagnard may be regarded as a first step toward its full demonstration. After the new facts elicited by that philosopher, there can be little doubt that the solid, liquid and aëriform state of bodies are merely stages in a progress of gradual transition from one extreme to the other, and that however strongly marked the distinctions between them may appear, they will ultimately turn out to be separated by no sudden or violent line of demarcation, but slide into each other by imperceptible gradations. Bacon's suggestion, however, is as old as Pythagoras, and perhaps simultaneous with the first dawn of philosophic reason. The doctrine of the reciprocal transmutation of the elements underlies all the physical systems of the ancients, and was adopted by the Epicureans as well as the Stoics. Ovid opens his last book of the Metamorphoses with the poetry of the subject, where he expressly points to the hint of Bacon: —

— — "Tenuatus in auras Aëraque humor abit, etc., *etc.*

Inde retro redeunt, idemque retexitur ordo." — xv. 246–249.

and Seneca, in the third book of his Natural Philosophy, quest. iv., states the opinion in more precise language than either the ancient bard or the modern philosopher. — *Ed.*

[116] The author's own system of Memoria Technica may be found in the De Augmentis, chap. xv. We may add that, notwithstanding Bacon's assertion that he intended his method to apply to religion, politics, and morals, this is the only lengthy illustration he has adduced of any subject out of the domain of physical science. — *Ed.*

[117] The collective instances here meant are no other than general facts or laws of some degree of generality, and are themselves the result of induction. For example, the system of Jupiter, or Saturn with its satellites, is a collective instance, and materially assisted in securing the admission of the Copernican system. We have here in miniature, and displayed at one view, a system analogous to that of the planets about the sun, of which, from the circumstance of our being involved in it, and unfavorably situated for seeing it otherwise than in detail, we are incapacitated from forming a general idea, but by slow and progressive efforts of reason.

But there is a species of collective instance which Bacon does not seem to have contemplated, in which particular phenomena are presented in such numbers at once, as to make the induction of their law a matter of ocular inspection. For example, the parabolic form assumed by a jet of water spouted out of a hole is a collective instance of the velocities and directions of the motions of all the particles which compose it seen together, and which thus leads us without trouble to recognize the law of the motion of a projectile. Again, the beautiful figures exhibited by sand strewed on regular plates of glass or metal set in vibration, are collective instances of an infinite number of points which remain at rest while the remainder of the plate vibrates, and in consequence afford us an insight into the law which regulates their arrangement and sequence throughout the whole surface. The richly colored lemniscates seen around the optic axis of crystals exposed to polarized light afford a striking instance of the same kind, pointing at once to the general mathematical expression of the law which regulates their production. Such collective instances as these lead us to a general law by an induction which offers itself spontaneously, and thus furnish advanced posts in philosophical exploration. The laws of Kepler, which Bacon ignored on account of his want of mathematical taste, may be cited as a collective instance. The first is, that the planets move in elliptical orbits, having the sun for their common focus. The second, that about this focus the *radius vector* of each planet describes equal areas in equal times. The third, that the squares of the periodic times of the planets are as the cubes of their mean distance from the sun. This collective instance "opened the way" to the discovery of the Newtonian law of gravitation. — *Ed.*

[118] Is not this very hasty generalization? Do serpents move with four folds only? Observe also the motion of centipedes and other insects.

[119] Shaw states another point of difference between the objects cited in the text — animals having their roots within, while plants have theirs without; for their lacteals nearly correspond with the fibres of the roots in plants; so that animals seem nourished within themselves as plants are without. — *Ed.*

[120] Bacon falls into an error here in regarding the syllogism as something distinct from the reasoning faculty, and only one of its forms. It is not generally true that the syllogism is only a form of reasoning by which we unite ideas which accord with the middle term. This agreement is not even essential to accurate syllogisms; when the relation of the two things compared to the third is one of equality or similitude, it of course follows that the two things compared may be pronounced equal, or like to each other. But if the relation between these terms exist in a different form, then it is not true that the two extremes stand in the

same relation to each other as to the middle term. For instance, if *A* is double of *B*, and *B* double of *C*, then *A* is quadruple of *C*. But then the relation of *A* to *C* is different from that of *A* to *B* and of *B* to *C*. — *Ed.*

[121] Comparative anatomy is full of analogies of this kind. Those between natural and artificial productions are well worthy of attention, and sometimes lead to important discoveries. By observing an analogy of this kind between the plan used in hydraulic engines for preventing the counter-current of a fluid, and a similar contrivance in the blood vessels, Harvey was led to the discovery of the circulation of the blood. — *Ed.*

[122] This is well illustrated in plants, for the gardener can produce endless varieties of any known species, but can never produce a new species itself.

[123] The discoveries of Tournefort have placed moss in the class of plants. The fish alluded to below are to be found only in the tropics. — *Ed.*

[124] There is, however, no real approximation to birds in either the flying fish or bat, any more than a man approximates to a fish because he can swim. The wings of the flying fish and bat are mere expansions of skin, bearing no resemblance whatever to those of birds. — *Ed.*

[125] Seneca was a sounder astronomer than Bacon. He ridiculed the idea of the motion of any heavenly bodies being irregular, and predicted that the day would come, when the laws which guided the revolution of these bodies would be proved to be identical with those which controlled the motions of the planets. The anticipation, was realized by Newton. — *Ed.*

[126] But see Bacon's own corollary at the end of the Instances of Divorce, Aphorism xxxvii. If Bacon's remark be accepted, the censure will fall upon Newton and the system so generally received at the present day. It is, however, unjust, as the centre of which Newton so often speaks is not a point with an active inherent force, but only the result of all the particular and reciprocal attractions of the different parts of the planet acting upon one spot. It is evident, that if all these forces were united in this centre, that the sum would be equal to all their partial effects. — *Ed.*

[127] Since Newton's discovery of the law of gravitation, we find that the attractive force of the earth must extend to an infinite distance. Bacon himself alludes to the operation of this attractive force at great distances in the Instances of the Rod, Aphorism xlv.

[128] Snow reflects light, but is not a source of light.

[129] Bacon's sagacity here foreshadows Newton's theory of the tides.

[130] The error in the text arose from Bacon's impression that the earth was immovable. It is evident, since gravitation acts at an infinite distance, that no such point could be found; and even supposing the impossible

point of equilibrium discovered, the body could not maintain its position an instant, but would be hurried, at the first movement of the heavenly bodies, in the direction of the dominant gravitating power. — *Ed.*

131 Fly clocks are referred to in the text, not pendulum clocks, which were not known in England till 1662. The former, though clumsy and rude in their construction, still embodied sound mechanical principles. The comparison of the effect of a spring with that of a weight in producing certain motions in certain times on altitudes and in mines, has recently been tried by Professors Airy and Whewell in Dalcoath mine, by means of a pendulum, which is only a weight moved by gravity, and a chronometer balance moved and regulated by a spring. In his thirty-seventh Aphorism, Bacon also speaks of gravity as an incorporeal power, acting at a distance, and requiring time for its transmission; a consideration which occurred at a later period to Laplace in one of his most delicate investigations.

Crucial instances, as Herschel remarks, afford the readiest and securest means of eliminating extraneous causes, and deciding between the claims of rival hypotheses; especially when these, running parallel to each other, in the explanation of great classes of phenomena, at length come to be placed at issue upon a single fact. A curious example is given by M. Fresnel, as decisive in his mind of the question between the two great theories on the nature of light, which, since the time of Newton and Huyghens, have divided philosophers. When two very clean glasses are laid one on the other, if they be not perfectly flat, but one or both, in an almost imperceptible degree, convex or prominent, beautiful and vivid colors will be seen between them; and if these be viewed through a red glass, their appearance will be that of alternate dark and bright stripes. These stripes are formed between the two surfaces in apparent contact, and being applicable on both theories, are appealed to by their respective supporters as strong confirmatory facts; but there is a difference in one circumstance, according as one or other theory is employed to explain them. In the case of the Huyghenian theory, the intervals between the bright stripes ought to appear absolutely black, when a prism is used for the upper glass, in the other half bright. This curious case of difference was tried, as soon as the opposing consequences of the two theories were noted by M. Fresnel, and the result is stated by him to be decisive in favor of that theory which makes light to consist in the vibrations of an elastic medium. — *Ed.*

132 Bacon plainly, from this passage, was inclined to believe that the moon, like the comets, was nothing more than illuminated vapor. The Newtonian law, however, has not only established its solidity, but its density and weight. A sufficient proof of the former is afforded by the attraction of the sea, and the moon's motion round the earth. — *Ed.*

133 Rather the refraction; the sky or air, however, *reflects* the blue rays of light.

134 The polished surface of the glass causes the reflection in this case, and not the air; and a hat or other black surface put behind the window in the daytime will enable the glass to reflect distinctly for the same reason, namely, that the reflected rays are not mixed and confused with those transmitted from the other side of the window.

[135] These instances, which Bacon seems to consider as a great discovery, are nothing more than disjunctive propositions combined with dilemmas. In proposing to explain an effect, we commence with the enumeration of the different causes which seem connected with its production; then with the aid of one or more dilemmas, we eliminate each of the phenomena accidental to its composition, and conclude with attributing the effect to the residue. For instance, a certain phenomenon (*a*) is produced either by phenomenon (*B*) or phenomenon (*C*); but *C* cannot be the cause of *a*, for it is found in *D*, *E*, *F*, neither of which are connected with *a*. Then the true cause of phenomenon (*a*) must be phenomenon (*B*).

This species of reasoning is liable to several paralogisms, against which Bacon has not guarded his readers, from the very fact that he stumbled into them unwittingly himself. The two principal ones are false exclusions and defective enumerations. Bacon, in his survey of the causes which are able to concur in producing the phenomena of the tides, takes no account of the periodic melting of the Polar ice, or the expansion of water by the solar heat; nor does he fare better in his exclusions. For the attraction of the planets and the progression and retrograde motion communicated by the earth's diurnal revolution, can plainly affect the sea together, and have a simultaneous influence on its surface.

Bacon is hardly just or consistent in his censure of Ramus; the end of whose dichotomy was only to render reasoning by dilemma, and crucial instances, more certain in their results, by reducing the divisions which composed their parts to two sets of contradictory propositions. The affirmative or negative of one would then necessarily have led to the acceptance or rejection of the other. — *Ed.*

[136] Père Shenier first pointed out the spots on the sun's disk, and by the marks which they afforded him, computed its revolution to be performed in twenty-five days and some hours. — *Ed.*

[137] Rust is now well known to be a chemical combination of oxygen with the metal, and the metal when rusty acquires additional weight. His theory as to the generation of animals, is deduced from the erroneous notion of the possibility of spontaneous generation (as it was termed). See the next paragraph but one.

[138]

"Limus ut hic durescit, et hæc ut cera liquescit Uno eodemque igni." — Virg. Ecl. viii.

[139] See Table of Degrees, No. 38.

[140] Riccati, and all modern physicists, discover some portion of light in every body, which seems to confirm the passage in Genesis that assigns to this substance priority in creation. — *Ed.*

[141] As instances of this kind, which the progress of science since the time of Bacon affords, we may cite the air-pump and the barometer, for manifesting the weight and elasticity of air: the measurement of the velocity of light, by means of the occultation of Jupiter's satellites and the aberration of the fixed stars: the

experiments in electricity and galvanism, and in the greater part of pneumatic chemistry. In all these cases scientific facts are elicited, which sense could never have revealed to us. — *Ed.*

142 The itinerant instances, as well as frontier instances, are cases in which we are enabled to trace the general law of continuity which seems to pervade all nature, and which has been aptly embodied in the sentence, "natura non agit per saltum." The pursuit of this law into phenomena where its application is not at first sight obvious, has opened a mine of physical discovery, and led us to perceive an intimate connection between facts which at first seemed hostile to each other. For example, the transparency of gold-leaf, which permits a bluish-green light to pass through it, is a frontier instance between transparent and opaque bodies, by exhibiting a body of the glass generally regarded the most opaque in nature, as still possessed of some slight degree of transparency. It thus proves that the quality of opacity is not a contrary or antagonistic quality to that of transparency, but only its extreme lowest degree.

143 Alluding to his theory of atoms.

144 Observe the approximation to Newton's theory. The same notion repeated still more clearly in the ninth motion. Newton believed that the planets might so conspire as to derange the earth's annual revolution, and to elongate the line of the apsides and ellipsis that the earth describes in its annual revolution round the sun. In the supposition that all the planets meet on the same straight line, Venus and Mercury on one side of the sun, and the earth, moon, Mars, Jupiter and Saturn on the side diametrically opposite; then Saturn would attract Jupiter, Jupiter Mars, Mars the moon, which must in its turn attract the earth in proportion to the force with which it was drawn out of its orbit. The result of this combined action on our planet would elongate its ecliptic orbit, and so far draw it from the source of heat, as to produce an intensity of cold destructive to animal life. But this movement would immediately cease with the planetary concurrence which produced it, and the earth, like a compressed spring, bound almost as near to the sun as she had been drawn from it, the reaction of the heat on its surface being about as intense as the cold caused by the first removal was severe. The earth, until it gained its regular track, would thus alternately vibrate between each side of its orbit, with successive changes in its atmosphere, proportional to the square of the variation of its distance from the sun. In no place is Bacon's genius more conspicuous than in these repeated guesses at truth. He would have been a strong Copernican, had not Gilbert defended the system. — *Ed.*

145 This is not true except when the projectile acquires greater velocity at every successive instant of its course, which is never the case except with falling bodies. Bacon appears to have been led into the opinion from observing that gunshots pierce many objects at a distance from which they rebound when brought within a certain proximity of contact. This apparent inconsistency, however, arises from the resistance of the parts of the object, which velocity combined with force is necessary to overcome. — *Ed.*

146 This passage shows that the pressure of the external atmosphere, which forces the water into the egg, was not in Bacon's time understood. — *Ed.*

147 We have already alluded, in a note prefixed to the same aphorism of the first book, to Newton's error of the absolute lightness of bodies. In speaking again of the volatile or spiritual substances (Aph. xl. b. ii.) which he supposed with the Platonists and some of the schoolmen to enter into the composition of every body, he ascribes to them a power of lessening the weight of the material coating in which he supposes them inclosed. It would appear from these passages and the text that Bacon had no idea of the relative density of bodies, and the capability which some have to diminish the specific gravity of the heavier substances by the dilation of their parts; or if he had, the reveries in which Aristotle indulged in treating of the soul, about the appetency of bodies to fly to kindred substances — flame and spirit to the sky, and solid opaque substances to the earth, must have vitiated his mind. — *Ed.*

148 Römer, a Danish astronomer, was the first to demonstrate, by connecting the irregularities of the eclipses of Jupiter's satellites with their distances from the earth, the necessity of time for the propagation of light. The idea occurred to Dominic Cassini as well as Bacon, but both allowed the discovery to slip out of their hands. — *Ed.*

149 The author in the text confounds inertness, which is a simple indifference of bodies to action, with gravity, which is a force acting always in proportion to their density. He falls into the same error further on. — *Ed.*

150 The experiments of the last two classes of instances are considered only in relation to practice, and Bacon does not so much as mention their infinitely greater importance in the theoretical part of induction. The important law of gravitation in physical astronomy could never have been demonstrated but by such observations and experiments as assigned accurate geometrical measures to the quantities compared. It was necessary to determine with precision the demi-diameter of the earth, the velocity of falling bodies at its surface, the distance of the moon, and the speed with which she describes her orbit, before the relation could be discovered between the force which draws a stone to the ground and that which retains the moon in her sphere.

In many cases the result of a number of particular facts, or the collective instances rising out of them, can only be discovered by geometry, which so far becomes necessary to complete the work of induction. For instance, in the case of optics, when light passes from one transparent medium to another, it is refracted, and the angle which the ray of incidence makes with the superficies which bounds the two media determines that which the refracted ray makes with the same superficies. Now, all experiment can do for us in this case is, to determine for any particular angle of incidence the corresponding angle of refraction. But with respect to the general rule which in every possible case deduces one of these angles from the other, or expresses the constant and invariable relation which subsists between them, experiment gives no direct information. Geometry must, consequently, be called in, which, when a constant though unknown relation subsists between two angles, or two variable qualities of any kind, and when an indefinite number of values of those quantities are assigned, furnishes infallible means of discovering that unknown relation either accurately or by approximation. In this way it has been found, when the two media remain the same, the

cosines of the above-mentioned angles have a constant ratio to each other. Hence, when the relations of the simple elements of phenomena are discovered to afford a general rule which will apply to any concrete case, the deductive method must be applied, and the elementary principles made through its agency to account for the laws of their more complex combinations. The reflection and refraction of light by the rain falling from a cloud opposite to the sun was thought, even before Newton's day, to contain the *form* of the rainbow. This philosopher transformed a probable conjecture into a certain fact when he deduced from the known laws of reflection and refraction the breadth of the colored arch, the diameter of the circle of which it is a part, and the relation of the latter to the place of the spectator and the sun. Doubt was at once silenced when there came out of his calculus a combination of the same laws of the simple elements of optics answering to the phenomena in nature. — *Ed.*

151 As far as this motion results from attraction and repulsion, it is only a simple consequence of the last two. — *Ed.*

152 These two cases are now resolved into the property of the capillary tubes and present only another feature of the law of attraction. — *Ed.*

153 This is one of the most useful practical methods in chemistry at the present day.

154 See Aphorism xxv.

155 Query?

156 Observe this approximation to Newton's theory.

157 Those differences which are generated by the masses and respective distances of bodies are only differences of quantity, and not specific; consequently those three classes are only one. — *Ed.*

158 See the citing instances, Aphorism xl.

159 Aristotle's doctrine, that sound takes place when bodies strike the air, which the modern science of acoustics has completely established, was rejected by Bacon in a treatise upon the same subject: "The collision or thrusting of air," he says, "which they will have to be the cause of sound, neither denotes the form nor the latent process of sound, but is a term of ignorance and of superficial contemplation." To get out of the difficulty, he betook himself to his theory of spirits, a species of phenomena which he constantly introduces to give himself the air of explaining things he could not understand, or would not admit upon the hypothesis of his opponents. — *Ed.*

160 The motion of trepidation, as Bacon calls it, was attributed by the ancient astronomers to the eight spheres, relative to the precession of the equinoxes. Galileo was the first to observe this kind of lunar

motion. — *Ed.*

[161] Part of the air is expanded and escapes, and part is consumed by the flame. When condensed, therefore, by the cold application, it cannot offer sufficient resistance to the external atmosphere to prevent the liquid or flesh from being forced into the glass.

[162] Heat can now be abstracted by a very simple process, till the degree of cold be of almost any required intensity. — *Ed.*

[163] It is impossible to compare a degree of heat with a degree of cold, without the assumption of some arbitrary test, to which the degrees are to be referred. In the next sentence Bacon appears to have taken the power of animal life to support heat or cold as the test, and then the comparison can only be between the degree of heat or of cold that will produce death.

The zero must be arbitrary which divides equally a certain degree of heat from a certain degree of cold. — *Ed.*

[164] It may often be observed on the leaves of the lime and other trees.

ORIGINAL LATIN TEXT.

DEEST PARS PRIMA
INSTAURATIONIS,

QUAE COMPLECTITUR

PARTITIONES SCIENTIARUM.
Illae tamen ex Secundo Libro de
Progressibus faciendis in
Doctrina Divina et
Humana,
nonnulla ex parte

peti possunt.

SEQUITUR SECUNDA PARS
INSTAURATIONIS,

QUAE ARTEM IPSAM

Interpretandi Naturam, et verioris adoperationis Intellectus exhibet: neque eam ipsam tamen in Corpore tractatus justi, sed tantum digestam per summas in

Aphorismos

SERENISSIMO

POTENTISSIMOQUE

PRINCIPI AC DOMINO

NOSTRO,
JACOBO,

DEI GRATIA

MAGNAE BRITANNIAE, FRANCIAE, ET HIBERNIAE REGI, FIDEI DEFENSORI, ETC.

Serenissime Potentissimeque Rex, Poterit fortasse Majestas tua me furti incusare, quod tantum temporis quantum ad haec sufficiat negotiis tuis suffuratus sim. Non haveo quod dicam. Temporis enim non fit restitutio; nisi forte quod detractum fuerit temporis rebus tuis, id memoriae nominis tui et honori saeculi tui reponi possit; si modo haec alicujus sint pretii. Sunt certe prorsus nova; etiam toto genere: sed descripta ex veteri admodum exemplari, mundo scilicet ipso, et natura rerum et mentis. Ipse certe (ut ingenue fatear) soleo aestimare hoc opus magis pro partu temporis quam ingenii. Illud enim in eo solummodo mirabile est, initia rei et tantas de iis quae invaluerunt suspiciones

alicui in mentem venire potuisse. Caetera non illibenter sequuntur. At versatur porculdubio casus (ut loquimur) et quiddam quasi fortuitum non minus in iis quae cogitant homines quam in iis quae agunt aut loquuntur. Verum hunc casum (de quo loquor) ita intelligi volo, ut si quid in his quae affero sit boni, id immensae misericordiae et bonitati divinae et foelicitati temporum tuorum tribuatur: cui et vivus integerrimo affectu servivi, et mortuus fortasse id effecero, ut illa posteritati, nova hac accensa face in philosophiae tenebris, praelucere possint. Merito autem temporibus regis omnium sapientissimi et doctissimi Regeneratio ista et Instauratio scientiarum debetur. Superest petitio, Majestate tua non indigna, et maxime omnium faciens ad id quod agitur. Ea est, ut quando Salomonem in plurimis referas, judiciorum gravitate, regno pacifico, cordis latitudine, librorum denique quos composuisti nobili varietate, etiam hoc ad ejusdem regis exemplum addas, ut cures Historiam Naturalem et Experimentalem, veram et severam (missis philologicis), et quae sit in ordine ad condendam philosophiam, denique qualem suo loco describemus, congeri et perfici: ut tandem post tot mundi aetates philosophia et scientiae non sint amplius pensiles et aereae, sed solidis experientiae omnigenae, ejusdemque bene pensitatae, nitantur fundamentis. Equidem Organum praebui; verum materies a rebus ipsis petenda est. Deus Opt. Max. Majestatem tuam diu sevet incolumem.

Serenissimae Majestati tuae Servus devinctissimus, et
devotissimus,
FRANCISCUS VERULAM,

CANCELLARIUS

FRANCISCI DE VERULAMIO

Sic Cogitavit;
Talemque Apud Se rationem instituit,quam Viventibus et Posteris notum fieri, ipsorum interesse putavit.

Cum illi pro comperto esset intellectum humanum sibi ipsi negotium facessere, neque auxiliis veris (quae in hominis potestate sunt) uti sobrie et commode; unde multiplex rerum ignoratio et ex ignoratione rerum detrimenta innumera: omni ope connitendum existimavit, si quo modo commercium istud Mentis et Rerum (cui vix aliquid in terris, aut saltem in terrenis, se ostendit simile) restitui posset in integrum, aut saltem in melius deduci. Ut vero errores qui invaluerunt, quique in aeternum invalituri sunt, alii post alios (si mens sibi permittatur) ipsi se corrigerent, vel ex vi intellectus propria vel ex auxiliis atque adminiculis dialecticae, nulla prorsus suberat spes; propterea quod notiones rerum primae, quas mens haustu facili et supino excipit recondit atque accumulat (unde reliqua omnia fluunt), vitiosae sint et confusae et temere a rebus abstractae; neque minor sit in secundis et reliquis libido et inconstantia; ex quo fit, ut universa ista ratio humana, qua utimur quoad inquisitionem naturae, non bene congesta et aedificata sit, sed tanquam moles aliqua magnifica sine fundamento. Dum enim falsas mentis vires mirantur homines et celebrant, veras ejusdem quae esse possint (si debita ei adhibeantur auxilia, atque ipsa rebus morigera sit, nec impotenter rebus insultet) praetereunt et perdunt. Restabat illud unum ut res de integro tentetur melioribus praesidiis, utque fiat scientiarum et artium atque omnis humanae doctrinae in universum Instauratio, a debitis excitata fundamentis. Hoc vero licet aggressu infinitum quiddam videri possit ac supra vires mortales, tamen idem tractatu sanum invenietur ac sobrium, magis quam ea quae adhuc facta sunt. Exitus enim hujus rei est nonnullus. In iis vero quae jam fiunt circa scientias, est vertigo quaedam et agitatio perpetua et circulus. Neque eum fugit quanta in solitudine versetur hoc experimentum, et quam durum et incredibile sit ad faciendam fidem. Nihilominus, nec rem nec seipsum deserendum putavit, quin viam quae una humanae menti pervia est tentaret atque iniret. Praestat enim principium dare rei quae exitum habere possit, quam in iis quae exitum nullum habent perpetua contentione et studio implicari. Viae autem contemplativae viis illis activis decantatis fere respondent; ut altera, ab initio ardua et difficilis, desinat in apertum; altera, primo intuitu expedita et proclivis, ducat in avia et praecipitia. Quum autem incertus esset quando haec alicui

posthac in mentem ventura sint; eo potissimum usus argumento, quod neminem hactenus invenit qui ad similes cogitations animum applicuerit; decrevit prima quaeque quae perficere licuit in publicum edere. Neque haec festinatio ambitiosa fuit, sed sollicita; ut si quid illi humanitus accideret, extaret tamen designatio quaedam ac destinatio rei quam animo complexus est; utque extaret simul signum aliquod honestae suae et propensae in generis humani commoda voluntatis. Certe aliam quamcunque ambitionem inferiorem duxit re quam prae manibus habuit. Aut enim hoc quod agitur nihil est, aut tantum, ut merito ipso contentum esse debeat nec fructum extra quaerere.

PRAEFATIO.

De statu scientiarum, quod non sit foelix aut majorem in modum auctus; quodque alia omnino quam prioribus cognita fuerit via aperienda sit intellectui humano, et alia comparanda auxilia, ut mens suo jure in rerum naturam uti possit.

Videntur nobis homines nec opes nec vires suas bene nosse; verum de illis majora quam par est, de his minora credere. Ita fit, ut aut artes receptas insanis pretiis aestimantes nil amplius quaerant, aut seipsos plus aequo contemnentes vires suas in levioribus consumant, in iis quae ad summum rei faciant non experiantur. Quare sunt et suae scientiis columnae tanquam fatales; cum ad ulterius penetrandum homines nec desiderio nec spe excitentur. Atque cum opinio copiae inter maximas causas inopiae sit; quumque ex fiducia praesentium vera auxilia negligantur in posterum; ex usu est, et plane ex necessitate, ut ab illis quae adhuc inventa sunt in ipso operis nostri limine (idque relictis ambagibus et non dissimulanter) honoris et admirationis excessus tollatur; utili monito, ne homines eorum aut copia aut utilitatem in majus accipiant aut celebrent. Nam si quis in omnem illam librorum varietatem qua artes et scientiae exultant diligentius introspiciat, ubique inveniet ejusdem rei repetitiones infinitas, tractandi modis diversas, inventione praeoccupatas; ut omnia primo intuitu numerosa, facto examine pauca reperiantur. Et de utilitate aperte dicendum est, sapientiam istam quam a Graecis potissimum hausims pueritiam quandam scientiae videri, atque habere quod proprium est puerorum, ut ad garriendum prompta, ad generandum invalida et immatura sit. Controversiarum enim ferax, operum effoeta est. Adeo ut fabula illa de Scylla in literarum statum, qualis habetur, ad vivum quadrare videatur; quae virginis os et vultum extulit, ad uterum vero monstra latrantia succingebantur et adhaerebant. Ita habent et scientiae quibus insuevimus generalia quaedam blandientia et speciosa, sed cum ad particularia ventum sit, veluti ad partes generationis, ut fructum et opera ex se edant, tum contentiones et oblatrantes disputationes exoriuntur, in quas desinunt,

et quae partus locum obtinent. Praeterea, si hujusmodi scientiae plane res mortua non essent, id minime videtur eventurum fuisse quod per multa jam saecula usu venit, ut illae suis immotae fere haereant vestigiis, nec incrementa genere humano digna sumant: eo usque, ut saepenumero non solum assertio maneat assertio sed etiam quaestio maneat quaestio, et per disputationes non solvatur sed figatur et alatur, omnisque traditio et successio disciplinarum repraesentet et exhibeat personas magistri et auditoris, non inventoris et ejus qui inventis aliquid eximium adjiciat. In artibus autem mechanicis contrarium evenire videmus; quae, ac si aurae cujusdam vitalis forent participes, quotidie crescunt et perficiuntur, et in primis authoribus rudes plerunque et fere onerosae et informes apparent, postea vero novas virtutes et commoditatem quandam adipiscuntur, eo usque, ut citius studia hominum et cupiditates deficiant et mutentur, quam illae ad culmen et perfectionem suam pervenerint. Philosophia contra et scientiae intellectuales, statuarum more, adorantur et celebrantur, sed non promoventur. Quin etiam in primo nonnunquam authore maxime vigent, et deinceps degenerant. Nam postquam homines dedititii facti sint et in unius sententiam (tanquam pedarii senatores) coierint, scientiis ipsis amplitudinem non addunt, sed in certis authoribus ornandis et stipandis servili officio funguntur. Neque illud afferat quispiam, scientias paullatim succrescentes tandem ad statum quendam pervenisse, et tum demum (quasi confectis spatiis legitimis) in operibus paucorum sedes fixas posuisse; atque postquam nil melius inveniri potuerit, restare scilicet ut quae inventa sint exornentur et colantur. Atque optandum quidem esset haec ita se habuisse. Rectius illud et verius, istas scientiarum mancipationes nil aliud esse quam rem ex paucorum hominum confidentia et reliquorum socordia et inertia natam. Postquam enim scientiae per partes diligenter fortasse excultae et tractatae fuerint, tum forte exortus est aliquis, ingenio audax et propter methodi compendia acceptus et celebratus, qui specie tenus artem constituerit, revera veterum labores corruperit. Id tamen posteris gratum esse solet, propter usum operis expeditum et inquisitionis novae taedium et impatientiam. Quod si quis consensu jam inveterato tanquam temporis judicio moveatur, sciat se ratione admodum fallaci et infirma niti.

Neque enim nobis magna ex parte notum est, quid in scientiis et artibus, variis saeculis et locis, innotuerit et in publicum emanarit; multo minus, quid a singulis tentatum sit et secreto agitatum. Itaque nec temporis partus nec abortus extant in fastis. Neque ipse consensus ejusque diuturnitas magni prorsus aestimandus est. Utcunque enim varia sint genera politiarum, unicus est status scientiarum, isque semper fuit et mansurus est popularis. Atque apud populum plurimum vigent doctrinae aut contentiosae et pugnaces aut speciosae et inanes, quales videlicet assensum aut illaqueant aut demulcent. Itaque maxima ingenia proculdubio per singulas aetates vim passa sunt; dum viri captu et intellectu non vulgares, nihilo secius existimationi suae consulentes, temporis et multitudinis judicio se submiserint. Quamobrem altiores contemplationes si forte usquam emicuerint, opinionum vulgarium ventis subinde agitatae sunt et extinctae. Adeo ut Tempus, tanquam fluvius, levia et inflata ad nos devexerit, gravia et solida demerserit. Quin et illi ipsi authores qui dictaturam quandam in scientiis invaserunt et tanta confidentia de rebus pronuntiant, cum tamen per intervalla ad se redeunt, ad querimonias de subtilitate naturae, veritatis recessibus, rerum obscuritate, causarum implicatione, ingenii humani infirmitate, se convertunt; in hoc nihilo tamen modestiores, cum malint communem hominum et rerum conditionem causari quam de seipsis confiteri. Quin illis hoc fere solenne est, ut quicquid ars aliqua non attingat id ipsum ex eadem arte impossibile esse statuant. Neque vero damnari potest ars, quum ipsa disceptet et judicet. Itaque id agitur, ut ignorantia etiam ab ignominia liberetur. Atque quae tradita et recepta sunt ad hunc fere modum se habent: quoad opera sterilia, quaestionum plena; incrementis suis tard et languida; perfectionem in tot simulantia, sed per partes male impleta; delectu autem popularia et authoribus ipsis suspecta, ideoque artificiis quibusdam munita et ostentata. Qui autem et ipsi experiri et se scientiis addere earumque fines proferre statuerunt, nec illi a receptis prorsus desciscere ausi sunt, nec fontes rerum petere. Verum se magnum quiddam consequutos putant si aliquid ex proprio inserant et adjiciant; prudenter secum reputantes, se in assentiendo modestiam, in adjiciendo libertatem tueri posse. Verum dum opinionibus et moribus consulitur, mediocritates istae laudatae in magnum scientiarum

detrimentum cedunt. Vix enim datur authores simul et admirari et superare. Sed fit aquarum more, quae non altius ascendunt quam ex quo descenderunt. Itaque hujusmodi homines emendant nonnulla sed parum promovent, et proficiunt in melius non in majus. Neque tamen defuerunt, qui ausu majore omnia integra sibi duxerunt, et ingenii impetu usi, priora prosternendo et destruendo aditum sibi et placitis suis fecerunt; quorum tumultu non magnopere profectum est: quum philosophiam et artes non re ac opere amplificare, sed placita tantum permutare atque regnum opinionum in se transferre contenderint; exiquo sane fructu, quum inter errores oppositos errandi causae sint fere communes. Si qui autem nec alienis nec propriis placitis obnoxii, sed libertati faventes, ita animati fuere ut alios secum simul quaerere cuperent; illi sane affectu honesti, sed conatu invalidi fuerunt. Probabiles enim tantum rationes secuti videntur, et argumentorum vertigine circumaguntur, et promiscua quaerendi licentia severitatem inquisitionis enervarunt. Nemo autem reperitur, qui in rebus ipsis et experientia moram fecerit legitimam. Atque nonnulli rursus qui experientiae undis se commisere et fere mechanici facti sunt, tamen in ipsa experientia erraticam quandam inquisitionem exercent, nec ei certa lege militant. Quin et plerique pusilla quaedam pensa sibi proposuere, pro magno ducentes si unum aliquod inventurm eruere possint; instituto non minus tenui, quam imperito. Nemo enim rei alicujus naturam in ipsa re recte aut foeliciter perscrutatur; verum post laboriosam experimentorum variationem non acquiescit, sed invenit quod ulterius quaerat. Neque illud imprimis omttendum est, quod omnis in experiendo industria statim ab initio opera quaedam destinata praepropero et intempestivo studio captavit; fructifera (inquam) experimenta, non lucifera, quaesivit; nec ordinem divinum imitata est, qui primo die lucem tantum creavit, eique unum diem integrum attribuit; neque illo die quicquam materiati operis produxit, verum sequentibus diebus ad ea descendit. At qui summas dialecticae partes tribuerunt ateque inde fidissima scientiis praesidia comparari putarunt, verissime et optime viderunt intellectum humanum sibi permissum merito suspectum esse debere. Verum infirmior omnino est malo medicina; nec ipsa mali expers. Siquidem dialectica quae recepta est, licet ad civilia et artes quae in sermone et

opinione positae sunt rectissime adhibeatur, naturae tamen subtilitatem longo intervallo non attingit; et prensando quod non capit, ad errores potius stabiliendos et quasi figendos quam ad viam veritati aperiendam valuit.

Quare, ut quae dicta sunt complectamur, non videtur hominibus aut aliena fides aut industria propria circa scientias hactenus foeliciter illuxisse; praesertim quum et in demonstrationibus et in experimentis adhuc cognitis parum sit praesidii. Aedificium autem hujus universi, structura sua, intellectui humano contemplanti, instar labyrinthi est; ubi tot ambigua viarum, tam fallaces rerum et signorum similitudines, tam obliquae et implexae naturarum spirae et nodi, undequaque se ostendunt. Iter autem sub incerto sensus lumine, interdum affulgente, interdum se condente, per experientiae et rerum particularium sylvas perpetuo faciendum est. Quin etiam duces itineris (ut dictum est) qui se offerunt, et ipsi implicantur, atque errorum et errantium numerum augent. In rebus tam duris, de judicio hominum ex vi propria, aut etiam de foelicitate fortuita, desperandum est. Neque enim ingeniorum quantacunque excellentia, neque experiendi alea saepius repetita, ista vincere queat. Vestigia filo regenda sunt: omnisque via, usque a primis ipsis sensuum perceptionibus, certa ratione munienda. Neque haec ita accipienda sunt, ac si nihil omnino tot saeculis, tantis laboribus, actum sit. Neque enim eorum quae inventa sunt nos poenitet. Atque antiqui certe, in iis quae in ingenio et meditatione abstracta posita sunt, mirabiles se viros praestitere. Verum quemadmodum saeculis prioribus, cum homines in navigando per stellarum tantum observationes cursum dirigebant, veteris sane continentis oras legere potuerunt, aut maria aliqua minora et mediterranea trajicere; priusquam autem oceanus trajiceretur et novi orbis regiones detegerentur, necesse fuit usum acus nauticae, ut ducem viae magis fidum et certum, innotuisse: simili prorsus ratione, quae hucusque in artibus et scientiis inventa sunt, ea hujusmodi sunt ut usu, meditatione, observando, argumentando, reperiri potuerint; utpote quae sensibus propiora sint et communibus notionibus fere subjaceant; antequam vero ad remotiora et occultiora naturae liceat appellere, necessario requiritur ut melior et perfectior mentis et intellectus humani usus et adoperatio introducatur.

Nos certe, aeterno veritatis amore devicti, viarum incertis et arduis et solitudinibus nos commisimus; et divino auxilio freti et innixi, mentem nostram et contra opinionum violentias et quasi instructas acies, et contra proprias et internas haesitationes et scrupulos, et contra rerum caligines et nubes et undequaque volantes phantasias, sustinuimus; ut tandem magis fida et secura indicia viventibus et posteris comparare possemus. Qua in re si quid profecerimus, non alia sane ratio nobis viam aperuit quam vera et legitima spiritus humani humiliatio. Omnes enim ante nos, qui ad artes inveniendas se applicuerunt, conjectis paulisper in res et exempla et experientiam oculis, statim, quasi inventio nil aliud esset quam quaedam excogitatio, spiritus proprios ut sibi oracula exhiberent quodammodo invocarunt. Nos vero inter res caste et perpetuo versantes, intellectum longius a rebus non abstrahimus quam ut rerum imagines et radii (ut in sensu fit) coire possint; unde fit, ut ingenii viribus et excellentiae non multum relinquatur. Atque quam in inveniendo adhibemus humilitatem, eandem et in docendo sequuti sumus. Neque enim aut confutationum triumphis, aut antiquitatis advocationibus, aut authoritatis usurpatione quadam, aut etiam obscuritatis velo, aliquam his nostris inventis majestatem imponere aut conciliare conamur; qualia reperire non difficile esset ei, qui nomini suo non animis aliorum lumen affundere conaretur. Non (inquam) ullum aut vim aut insidias hominum judiciis fecimus aut paramus; verum eos ad res ipsas et rerum foedera adducimus; ut ipsi videant quid habeant, quid arguant, quid addant atque in commune conferant. Nos autem si qua in re vel male credidimus, vel obdormivimus et minus attendimus, vel defecimus in via et inquisitionem abrupimus, nihilominus iis modis res nudas et apertas exhibemus, ut errores nostri, antequam scientiae massam altius inficiant, notari et separari possint; atque etiam ut facilis et expedita sit laborum nostrorum continuatio. Atque hoc modo inter empiricam et rationalem facultatem (quarum morosa et inauspicata divortia et repudia omnia in humana familia turbavere) conjugium verum et legitimum in perpetuum nos firmasse existimamus.

Quamobrem, quum haec arbitrii nostri non sint, in principio operis, ad Deum Patre, Deum Verbum, Deum Spiritum, presces fundimus humillimas et

ardentissimas, ut humani generis aerumnarum memores et peregrinationis istius vitae in qua dies paucos et malos terimus, novis suis eleemosynis, per manus nostras, familiam humanam dotare dignentur. Atque illud insuper supplices rogamus, ne humana divinis officiant, neve ex reseratione viarum sensus et accensione majore luminis naturalis aliquid incredulitatis et noctis animis nostris erga divina mysteria oboriatur: sed potius, ut ab intellectu puro, a phantasiis et vanitate repurgato et divinis oraculis nihilominus subdito et prorsus deditio, fidei dentur quae fidei sunt. Postremo, ut scientiae veneno a serpente infuso, quo animus humanus tumet et inflatur, deposito, nec altum sapiamus nec ultra sobrium, sed veritatem in charitate colamus.

Peractis autem votis, ad homines conversi, quaedam et salutaria monemus et aequa postulamus. Monemus primum (quod etiam precati sumus) ut homines sensum in officio, quoad divina, contineant. Sensus enim (instar solis) globi terrestris faciem aperit, coelestis claudit et obsignat. Rursus, ne hujusce mali fuga in contrarium peccent; quod certe fiet, si naturae inquisitionem ulla ex parte veluti interdicto separatam putant. Neque enim pura illa et immaculata scientia naturalis, per quam Adam nomina ex proprietate rebus imposuit, principium aut occasionem lapsui dedit. Sed ambitiosa illa, et imperativa scientiae moralis, de bono et malo dijudicantis, cupiditas, ad hoc ut Homo a Deo deficeret et sibi ipsi leges daret, ea demum ratio atque modus tentationis fuit. De scientiis autem quae naturam contemplantur sanctus ille philosophus pronuntiat, Gloriam Dei esse celare rem; gloriam regis autem rem invenire: non aliter ac si divina natura innocenti et benevolo purorum ludo delectaretur, qui ideo se abscondunt ut inveniantur; atque animam humanam sibi collusorem in hoc ludo pro sua in homines indulgentia et bonitate cooptaverit. Postremo omnes in universum monitos volumus, ut scientiae veros fines cogitent; nec eam aut animi causa petant, aut ad contentionem, aut ut alios despiciant, aut ad commodum, aut ad famam, aut ad potentiam, aut hujusmodi inferiora; sed ad meritum et usus vitae; eamque in charitate perficiant et regant. Ex appetitu enim potentiae angeli lapsi sunt; ex appetitu scientiae, homines; sed charitatis non est excessus; neque angelus aut homo per eam unquam in periculum venit.

Postulata autem nostra quae afferimus talis sunt. De nobis ipsis silemus: de re autem quae agitur petimus, ut homines eam non opinionem sed opus esse cogitent; ac pro certo habeant, non sectae nos alicujus aut placiti, sed utilitatis et amplitudinis humanae fundamenta moliri. Deinde ut suis commodis aequi, exutis opinionum zelis et praejudiciis, in commune consulant; ac ab erroribus viarum atque impedimentis, nostris praesidiis et auxiliis, liberati et muniti, laborum qui restant et ipsi in partem veniant. Praeterea, ut bene sperent; neque Instaurationem nostram, ut quiddam infinitum et ultra mortale, fingant et animo concipiant; quum revera sit infiniti erroris finis et terminus legitimus; mortalitatis autem et humanitatis non sit immemor; quum rem non intra unius aetatis curriculum omnino perfici posse confidat, sed successioni destinet; denique scientias, non per arrogantiam in humani ingenii cellulis, sed submisse in mundo majore quaerat. Vasta vero ut plurimum solent esse, quae inania: solida contrahuntur maxime, et in parvo sita sunt. Postremo etiam petendum videtur (ne forte quis rei ipsius periculo nobis iniquus esse velit) ut videant homines, quatenus ex eo quod nobis asserere necesse sit (si modo nobis ipsi constare velimus) de his nostris opinandi aut sententiam ferendi sibi jus permissum putent: quum nos omnem istam rationem humanam praematuram, anticipantem, et a rebus temere et citius quam oportuit abstractam, (quatenus ad inquisitionem naturae) ut rem variam et perturbatam et male extructam rejiciamus. Neque postulandum est ut ejus judicio stetur, quae ipsa in judicium vocatur.

DISTRIBUTIO OPERIS

Ejus constituuntur Partes sex.

Prima; Partitiones Scientiarum.

Secunda; Novum Organum, sive Indicia de Interpretatione Naturae.

Tertia; Phaenomena Universi, sive Historia Naturalis et Experimentalis ad condendam Philosophiam.

Quarta; Scala Intellectus.

Quinta; Prodromi, sive Anticipationes Philosophiae Secundae.

Sexta; Philosophia Secunda, sive Scientia Activa.

Singularum Argumenta.

Pars autem instituti nostri est, ut omnia, quantum fieri potest aperte et perspicue proponantur. Nuditas enim animi, ut olim corporis, innocentiae et simplicitatis comes est. Pateat itaque primo ordo operis atque ratio ejus. Partes operis a nobis constituuntur sex.

Prima pars exhibet scientiae ejus sive doctrinae in cujus possessione humanum genus hactenus versatur, Summam, sive descriptionem universalem. Visum enim est nobis etiam in iis quae recepta sunt nonnullam facere moram: eo nimirum consilio, ut facilius et veteribus perfectio et novis aditus detur. Pari enim fere studio ferimur et ad vetera excolenda et ad ulteriora assequenda. Pertinet etiam hoc ad faciendam fidem: juxta illud, Non accipit indoctus verba scientiae, nisi prius ea dixeris quae versantur in corde ejus. Itaque scientiarum atque artium receptarum oras legere, necnon utilia quaedam in illas importare, tanquam in transitu, non negligemus.

Partitiones tamen Scientiarum adhibemus eas, quae non tantum jam inventa et nota, sed hactenus omissa et debita, complectantur. Etenim inveniuntur in globo intellectuali, quemadmodum in terrestri, et culta pariter et deserta. Itaque nil mirum videri debet, si a divisionibus usitatis quandoque recedamus. Adjectio enim, dum totum variat, etiam partes earumque sectiones necessario variat:

receptae autem divisiones receptae summae scientiarum, qualis nunc est, tantum competunt.

Circa ea vero quae ceu omissa notabimus, ita nos geremus, ut non leves tantum titulos et argumenta concisa eorum quae desiderantur proponamus. Nam siquid inter omissa retulerimus (modo sit dignioris subjecti) cujus ratio paulo videatur obscurior adeo ut merito suspicari possimus homines non facile intellecturos quid nobis velimus aut quale sit illud opus quod animo et cogitatione complectimur, perpetuo nobis curae erit aut praecepta hujusmodi operis conficiendi aut etiam partem operis ipsius jam a nobis confectam ad exemplum totius subjungere; ut in singulis aut opera aut consilio juvemus. Etenim etiam as nostram existimationem, non solum aliorum utilitatem, pertinere putavimus, ne quis arbitretur levem aliquam de istiusmodi rebus notionem mentem nostram perstrinxisse, atque esse illa quae desideramus ac prensamus tanquam votis similia. Ea vero talia sunt, quorum et penes homines (nisi sibi ipsi desint) potestas plane sit, et nos apud nosmet rationem quandam certam et explicatam habeamus. Neque enim regiones metiri animo, ut augures, auspiciorum cause: sed intrare, ut duces, promerendi studio, suscepimus.

Atque haec prima operis pars est.

Porro praetervecti artes veteres, intellectum humanum ad trajiciendum instruemus. Destinatur itaque parti secundae, doctrina de meliore et perfectiore usu rationis in rerum inquisitione, et de auxiliis veris intellectus: ut per hoc (quantum conditio humanitatis ac mortalitatis patitur) exaltetur intellectus, et facultate amplificetur ad naturae ardua et obscura superanda. Atque est ea quam adducimus ars (quam Interpretationem Naturae appellare consuevimus) ex genere logicae; licet plurimum, atque adeo immensum quiddam, intersit. Nam et ipsa illa logica vulgaris auxilia et praesidia intellectui moliri ac parare profitetur: et in hoc uno consentiunt. Differt autem plane a vulgari rebus praecipue tribus: *viz.* ipso fine, ordine demonstrandi, et inquirendi initiis.

Nam huic nostrae scientiae finis proponitur, ut inveniantur non argumenta sed artes, nec principiis consentanea sed ipsa principia, nec rationes probabiles sed designationes et indicationes Operum. Itaque ex intentione diversa diversus

sequitur effectus. Illic enim adversarius disputatione vincitur et constringitur; hic natura, opere.

Atque cum hujusmodi fine conveniunt demonstrationum ipsarum natura et ordo. In logica enim vulgari opera fere universa circa Syllogismum consumitur. De Inductione vero Dialectici vix serio cogitasse videntur; levi mentione eam transmittentes, et ad disputandi formulas properantes. At nos demonstrationem per syllogismum rejicimus, quod confusius agat, et naturam emittat e manibus. Tametsi enim nemini dubium esse possit quin, quae in medio termino conveniunt, ea et inter se conveniant (quod est mathematicae cujusdam certitudinis): nihilominus hoc subest fraudis, quod syllogismus ex propositionibus constet, propistiones ex verbis, verba autem notionum tesserae et signa sint. Itaque si notiones ipsae mentis (quae verborum quasi anima sunt, et totius hujusmodi structurae ac fabricae basis) male ac temere a rebus abstractae, et vagae, nec satis definitae et circumscriptae, denique multis modis vitiosae fuerint, omnia ruunt. Rejicimus igitur syllogismum; neque id solum quoad principia (ad quae nec illi eam adhibent) sed etiam quoad propositiones medias, quas educit sane atque parturit utcunque syllogismus, sed operum steriles et a practica remotas et plane quoad partem activam scientiarum incompetentes. Quamvis igitur relinquamus syllogismo et hujusmodi demonstrationibus famosis ac jactatis jurisdictionem in artes populares et opinabiles (nil enim in hac parte movemus), tamen ad naturam rerum Inductione per omnia, et tam ad minores propositiones quam ad majores, utimur. Inductionem enim censemus eam esse demonstrandi formam, quae sensum tuetur et naturam premit et operibus imminet ac fere immiscetur.

Itaque ordo quoque demonstrandi plane invertitur. Adhuc enim res ita geri consuevit; ut a sensu et particularibus primo loco ad maxime generalia advoletur, tanquam ad polos fixos circa quos disputationes vertantur; ab illis caetera per media deriventur: via certe compendiaria, sed praecipiti, et ad naturam impervia, ad disputationes vero proclivi et accommodata. At secundum nos, axiomata continenter et gradatim excitantur, ut nonnisi postremo loco ad generalissima veniatur: ea vero generalissima evadunt non notionalia, sed bene terminata, et

talia quae natura ut revera sibi notiora agnoscat, quaeque rebus haereant in medullis.

At in forma ipsa quoque inductionis, et judicio quod per eam fit, opus longe maximum movemus. Ea enim de qua dialectici loquuntur, quae procedit per enumerationem simplicem, puerile quiddam est, et precario concludit, et periculo ab instantia contradictoria exponitur, et consueta tantum intuetur, nec exitum reperit.

Atqui opus est ad scientias inductionis forma tali, quae experientiam solvat et separet, et per exclusiones ac rejectiones debitas necessario concludat. Quod si judicium illud vulgatum dialecticorum tam operosum fuerit, et tanta ingenia exercuerit; quanto magis laborandum est in hoc altero, quod non tantum ex mentis penetralibus, sed etiam ex naturae visceribus extrahitur?

Neque tamen hic finis. Nam fundamenta quoque scientiarum fortius deprimimus et solidamus, atque initia inquirendi altius sumimus, quam adhuc homines fecerunt: ea subjiciendo examini, quae logica vulgaris tanquam fide aliena recipit. Etenim dialectici principia scientiarum a scientiis singulis tanquam mutuo sumunt: rursus, notiones mentis primas venerantur: postremo, informationibus immediatis sensus bene dispositi acquiescunt. At nos logicam veram singulas scientiarum provincias majore cum imperio quam penes ipsarum principia sit debere ingredi decrevimus, atque illa ipsa principia putativa ad rationes reddendas compellere quousque plane constent. Quod vero attinet ad notiones primas intellectus; nihil est eoroum quae intellectus sibi permissus congessit, quin nobis pro suspecto sit, nec ullo modo ratum, nisi novo judicio se stiterit et secundum illud pronuntiatum fuerit. Quinetiam sensus ipsius informationes multis modis excutimus. Sensus enim fallunt utique, sed et errores suos indicant: verum errores praesto, indicia eorum longe petita sunt.

Duplex autem est sensus culpa: aut enim destituit nos aut decipit. Nam primo, plurimae sunt res quae sensum etiam recte dispositum nec ullo modo impeditum effugiunt; aut subtilitate totius corporis, aut partium minutiis, aut loci distantia, aut tarditate atque etiam velocitate motus, aut familiaritate objecti, aut alias ob causas. Neque rursus, ubi sensus rem tenet, prehensiones ejus admodum firmae

sunt. Nam testimonium et informatio sensus semper est ex analogia hominis, non ex analogia universi: atque magno prorsus errore asseritur, sensum esse mensuram rerum.

Itaque ut his occurratur, nos multo et fido ministerio auxilia sensui undique conquisivimus et contraximus, ut destitutionibus substitutiones, variationibus rectificationes suppeditentur. Neque id molimur tam instrumentis quam experimentis. Etenim experimentorum longe major est subtilitas quam sensus ipsius, licet instrumentis exquisitis adjuti; (de iis loquimur experimentis, quae ad intentionem ejus quod quaeritur perite et secundum artem excogitata et apposita sunt). Itaque perceptioni sensus immediatae ac propriae non multum tribuimus: sed eo rem deducimus, ut sensus tantum de experimento, experimentum de re judicet. Quare existimamus nos sensus (a quo omnia in naturalibus petenda sunt, nisi forte libeat insanire) antistites religiosos, et oraculorum ejus non imperitos interpretes, nos praestitisse: ut alii professione quadam, nos re ipsa, sensum tueri ac colere videamus. Atque hujusmodi sunt ea quae ad lumen ipsum naturae ejusque accensionem et immissionem paramus: quae per se sufficere possent, si intellectus humanus aequus et instar tabulae abrasae esset. Sed cum mentes hominum miris modis adeo obsessae sint ut ad veros rerum radios excipiendos sincera et polita area prorsus desit, necessitas quaedam incumbit ut etiam huic rei remedium quaerendum esse putemus.

Idola autem a quibus occupatur mens, vel Adscititia sunt vel Innata. Adscititia vero immigrarunt in mentes hominum, vel ex philosophorum placitis et sectis vel ex perversis legibus demonstrationum. At Innata inhaerent naturae ipsius intellectus, qui ad errorem longe proclivior esse deprehenditur quam sensus. Utcunque enim homines sibi placeant et in admirationem mentis humanae ac fere adorationem ruant, illud certissimum est: sicut speculum inaequale rerum radios ex figura et sectione propria immutat, ita et mentem, cum a rebus per sensum patitur, in notionibus suis expediendis et comminiscendis haud optima fide rerum naturae suam naturam inserere et immiscere.

Atque priora illa duo Idolorum genera aegre, postrema vero haec nullo modo, evelli possunt. Id tantum relinquitur, ut indicentur, atque ut vis ista mentis

insidiatrix notetur et convincatur; ne forte a destructione veterum novi subinde errorum surculi ex ipsa mala complexione mentis pullulent, eoque res recidat, ut errores non extinguantur se permutentur; verum e contra ut illud tandem in aeternum ratum et fixum sit, intellectum nisi per inductionem ejusque formam legitimam judicare non posse. Itaque doctrina ista de expurgatione intellectus ut ipse ad veritatem habilis sit, tribus redargutionibus absolvitur: redargutione philosophiarum, redargutione demonstrationum, et redargutione rationis humanae nativae. His vero explicatis, ac postquam demum patuerit quid rerum natura, quid mentis natura ferat, existimamus nos thalamum Mentis et Universi, pronuba divina bonitate, stravisse et ornasse. Epithalamii autem votum sit, ut ex eo connubio auxilia humana et stirps inventorum quae necessitates ac miserias hominum aliqua ex parte doment et subigant, suscipiatur. Haec vero est operis pars secunda.

At vias non solum monstrare et munire, sed inire quoque consilium est. Itaque tertia pars operis complectitur Phaenomena Universi; hoc est, omnigenam experientiam, atque historiam naturalem ejus generis quae possit esse ad condendam philosophiam fundamentalis. Neque enim excellens aliqua demonstrandi via sive naturam interpretandi forma, ut mentem ab errore et lapsu defendere ac sustinere, ita ei materiam ad sciendum praebere et subministrare possit. Verum iis quibus non conjicere et hariolari, sed invenire et scire propositum est, quique non simiolas et fabulas mundorum comminisci, sed hujus ipsius veri mundi naturam introspicere et velut dissecare in animo habent, omnia a rebus ipsis petenda sunt. Neque huic labori et inquisitioni ac mundanae perambulationi, ulla ingenii aut meditationis aut argumentationis substitutio aut compensatio sufficere potest; non si omnia omnium ingenia coierint. Itaque aut hoc prorsus habendum, aut negotium in perpetuum deserendum. Ad hunc vero usque diem ita cum hominibus actum est, ut minime mirum sit si natura sui copiam non faciat.

Nam primo, sensus ipsius informatio, et deserens et fallens: observatio, indiligens et inaequalis et tanquam fortuita; traditio, vana et ex rumore; practica, operi intenta et servilis; vis experimentalis, caeca, stupida, vaga, et praerupta;

denique historia naturalis, levis et inops, vitiosissimam materiam intellectui ad philosophiam et scientias congesserunt.

Deinde, praepostera argumentandi subtilitas et ventilatio serum rebus plane desperatis tentatur remedium, nec negotium ullo modo restituit aut errores separat. Itaque nulla spes majoris augmenti ac progressus sita est, nisi in restauratione quadam scientiarum.

Hujus autem exordia omnino a naturali historia sumenda sunt, eaque ipsa novi cujusdam generis et apparatus. Frustra enim fuerit speculum expolire, si desint imagines; et plane materia idonea praeparanda est intellectui, non solum praesidia fida comparanda. Differt vero rursus historia nostra (quemadmodum logica nostra) ab ea quae habetur, multis rebus: fine sive officio, ipsa mole et congerie, dein subtilitate, etiam delectu et constitutione in ordine ad ea quae sequuntur.

Primo enim eam proponimus historiam naturalem, quae non tam aut rerum varietate delectet aut praesenti experimentorum fructu juvet, quam lucem inventioni causarum affundat, et philosophiae enutricandae primam mammam praebeat. Licet enim opera atque activam scientiarum partem praecipue sequamur, tamen messis tempus expectamus, nec muscum et segetem herbidam demetere conamur. Satis enim scimus, axiomata recte inventa tota agmina operum secum trahere, atque opera non sparsim sed confertim exhibere. Intempestivum autem illum et puerilem affectum, ut pignora aliqua novorum operum propere captentur, prorsus damnamus et amovemus, ceu pomum Atalantae quod cursum retardat. Atque Historiae nostrae Naturalis officium tale est.

Quoad congeriem vero, conficimus historiam non solum naturae liberae ac solutae (cum scilicet illa sponte fluit et opus suum peragit), qualis est historia coelestium, meteororum, terrae et maris, mineralium, plantarum, animalium; sed multo magnis naturae constrictae et vexatae; nempe, cum per artem et ministerium humanum de statu suo detruditur, atque premitur et fingitur. Itaque omnia artium mechanicarum, omnia operativae partis liberalium, omnia practicarum complurium quae in artem propriam non coaluerunt, experimenta

(quantum inquirere licuit et quantum ad finem nostrum faciunt) perscribimus. Quin etiam (ut quod res est eloquamur) fastum hominum et speciosa nil morati, multo plus et operae et praesidii in hac parte quam in illa altera ponimus; quandoquidem natura rerum magis se prodit per vexationes artis quam in libertate propria.

Neque Corporum tantum historiam exhibemus; sed diligentiae insuper nostrae esse putavimus, etiam Virtutum ipsarum (illarum dicimus quae tanquam cardinales in natura censeri possint, et in quibus naturae primordia plane constituuntur, utpote materiae primis passionibus ac desideriis, *viz.* Denso, Raro, Calido, Frigido, Consistenti, Fluido, Gravi, Levi, aliisque haud paucis) historiam seorsum comparare.

Enimvero ut de subtilitate dicamus, plane conquirimus genus experimentorum longe subtilius et simplicius quam sunt ea quae occurrunt. Complura enim a tenebris educimus et eruimus, quae nulli in mentem venisset investigare, nisi qui certo et constanti tramite ad inventionem causarum pergeret; cum in se nullius magnopere sint usus; ut liquido appareat, ea non propter se quaesita esse; sed ita prorsus se habeant illa ad res et opera quemadmodum literae alphabeti se habeant ad orationem et verba; quae licet per se inutiles eaedem tamen omnis sermonis elementa sunt.

In delectu autem narrationum et experimentorum melius hominibus cavisse nos arbitramur, quam qui adhuc in historia naturali versati sunt. Nam omnia fide oculata aut saltem perspecta, et summa quadam cum severitate, recipimus; ita ut nil referatur auctum miraculi causa, sed quae narramus a fabulis et vanitate casta et intemerata sint. Quinetiam et recepta quaeque ac jactata mendacia (quae mirabili quodam neglectu per saecula multa obtinuerunt et inveterata sunt) nominatim proscribimus et notamus; ne scientiis amplius molesta sint. Quod enim prudenter animadvertit quidam, fabulas et superstitiones et nugas quas nutriculae pueris instillant, mentes eorum etiam serio depravare: ita eadem nos movit ratio ut solliciti atque etiam anxii simus ne ab initio, cum veluti infantiam philosophiae sub historia naturali tractemus et curemus, illa alicui vanitati assuescat. At in omni experimento novo et paulo subtiliore, licet (ut nobis

videtur) certo ac probato, modum tamen experimenti quo usi sumus aperte subjungimus; ut, postquam patefactum sit quomodo singula nobis constiterint, videant homines quid erroris subesse et adhaerere possit, atque ad probationes magis fidas et magis exquistas (si quae sint) expergiscantur: denique ubique monita et scrupulos et cautiones aspergimus, religione quadam et tanquam exorcismo omnia phantasmata ejicientes ac cohibentes.

Postremo, cum nobis exploratum sit quantopere experientia et historia aciem mentis humanae disgreget, et quam difficile sit (praesertim animis vel teneris vel praeoccupatis) a principio cum natura consuescere, adjungimus saepius observationes nostras, tanquam primas quasdam conversiones et inclinationes ac veluti aspectus historiae ad philosophiam; ut et pignoris loco hominibus sint eos in historiae fluctibus perpetuo non detentos iri, utque cum ad opus intellectus deveniatur omnia sint magis in procinctu. Atque per hujusmodi (qualem describimus) Historiam Naturalem, aditum quendam fieri posse ad naturam tutum et commodum, atque materiam intellectui praeberi probam et praeparatam, censemus.

Postquam vero et intellectum fidissimis auxiliis se praesidiis stipavimus, et justum divinorum operum exercitum severissimo delectu comparavimus; nil amplius superesse videtur, nisi ut philosophiam ipsam aggrediamur. Attamen in re tam ardua et suspensa, sunt quaedam quae necessario videntur interponenda; partim docendi gratia, partim in usum praesentem.

Horum primum est, ut exempla proponantur inquirendi et inveniendi secundum nostram rationem ac viam, in aliquibus subjectis repraesentata: sumendo ea potissimum subjecta quae et inter ea quae quaeruntur sunt nobilissima et inter se maxime diversa; ut in unoquoque genere exemplum non desit. Neque de iis exemplis loquimur quae singulis praeceptis ac regulis illustrandi gratia adjiciuntur (hoc enim in secunda parte operis abunde praestitimus); sed plane typos intelligimus et plasmata, quae universum mentis processum atque inveniendi continuatam fabricam et ordinem, in certis subjectis, iisque variis et insignibus, tanquam sub oculos ponant. Etenim nobis in mentem venit, in mathematicis, astante machina, sequi demonstrationem facilem et

perspicuam; contra absque hac commoditate, omnia videri involuta et, quam revera sunt, subtiliora. Itaque hujusmodi exemplis quartam partem nostri operis attribuimus: quae revera nil aliud est, quam secundae partis applicatio particularis et explicata.

At quinta pars ad tempus tantum, donec reliqua perficiantur, adhibetur; et tanquam foenus redditur, usque dum sors haberi possit. Neque enim finem nostrum ita petimus occaecati, ut quae occurrunt in via utilia negligamus. Quamobrem quintam partem operis ex iis conficimus quae a nobis aut inventa aut probata aut addita sunt; neque id tamen ex rationibus atque praescriptis interpretandi, sed ex eodem intellectus usu quem alii in inquirendo et inveniendo adhibere consueverunt. Etenim cum, ex perpetua nostra cum natura consuetudine, majora de meditationibus nostris quam pro ingenii viribus speramus; tum poterunt ista veluti tabernaculorum in via positorum vice fungi, ut mens ad certiora contendens in iis paulisper acquiescat. Attamen testamur interim, nos illis ipsis, quod ex vera interpretandi forma non sint inventa aut probata, teneri minime velle. Istam vero judicii suspensionem non est quod exhorreat quispiam, in doctrina quae non simpliciter nil sciri posse, sed nil nisi certo ordine et certa via sciri posse, asserit; atque interea tamen certos certitudinis gradus ad usum et levamen constituit, donec mens in causarum explicatione consistat. Neque enim illae ipsae scholae philosophorum qui Acatalepsiam simpliciter tenuerunt inferiores fuere istis quae pronuntiandi licentiam usurparunt. Illae tamen sensui et intellectui auxilia non paraverunt, quod nos fecimus, sed fidem et authoritatem plane sustulerunt; quod longe alia res est, et fere opposita.

Sexta tandem pars operis nostri (cui reliquae inserviunt ac ministrant) eam demum recludit et proponit philosophiam, quae ex hujusmodi (qualem ante docuimus et paravimus) inquisitione legitima et casta et severa educitur et constituitur. Hanc vero postremam partem perficere et ad exitum perducere, res est et supra vires et ultra spes nostras collocata. Nos ei initia (ut speramus) non contemnenda, exitum generis humani fortuna dabit, qualem forte homines in hoc rerum et animorum statu haud facile animo capere aut metiri queant. Neque

enim agitur solum foelicitas contemplativa, sed vere res humanae et fortunae, atque omnis operum potentia. Homo enim naturae minister et interpres tantum facit et intelligit, quantum de naturae ordine, opere vel mente, observaverit: nec amplius scit, aut potest. Neque enim ullae vires causarum catenam solvere aut perfringere possint; neque natura aliter quam parendo vincitur. Itaque intentiones geminae illae, humanae scilicet Scientiae et Potentiae, vere in idem coincidunt; et frustratio operum maxime fit ex ignoratione causarum.

Atque in eo sunt omnia, siquis oculos mentis a rebus ipsis nunquam dejiciens, earum imagines plane ut sunt excipiat. Neque enim hoc siverit Deus, ut phantasiae nostrae somnium pro exemplari mundi edamus: sed potius benigne faveat, ut apocalypsim ac veram visionem vestigiorum et sigillorum creatoris super creaturas scribamus.

Itaque Tu Pater, qui lucem visibilem primitias creaturae dedisti, et lucem intellectualem ad fastigium operum tuorum in faciem hominis inspirasti; opus hoc, quod a tua bonitate profectum tuam gloriam repetit, tuere et rege. Tu postquam conversus es ad spectandum opera quae fecerunt manus tuae, vidisti quod omnia essent bona valde; et requievisti. At homo conversus ad opera quae fecerunt manus suae, vidit quod omnia essent vanitas et vexatio spiritus; nec ullo modo requievit. Quare si in operibus tuis sudabimus, facies nos visionis tuae et sabbati tui participes. Supplices petimus, ut haec mens nobis constet; utque novis eleemosynis, per manus nostras et aliorum quibus eandem mentem largieris, familiam humanam dotatam velis.

PARS SECUNDA OPERIS,

QUAE DICITUR

NOVUM ORGANUM,

SIVE

INDICIA VERA

DE INTERPRETATIONE

NATURAE.

PRAEFATIO.

Qui de natura, tanquam de re explorata, pronuntiare ausi sunt, sive hoc ex animi fiducia fecerint sive ambitiose et more professorio, maximis illi philosophiam et scientias detrimentis affecere. Ut enim ad fidem faciendam validi, ita etiam ad inquisitionem extinguendam et abrumpendam efficaces fuerunt. Neque virtute propria tantum profuerunt, quantum in hoc nocuerunt, quod aliorum virtutem corruperint et perdiderint. Qui autem contrariam huic viam ingressi sunt atque nihil prorsus sciri posse asseruerunt, sive ex sophistarum veterum odio sive ex animi fluctuatione aut etiam ex quadam doctrinae copia in hanc opinionem delapsi sint, certe non contemnendas ejus rationes adduxerunt; veruntamen nec a veris initiis sententiam suam derivarunt, et, studio quodam atque affectatione provecti, prorsus modum excesserunt. At antiquiores ex Graecis (quorum scripta perierunt) inter pronuntiandi jactantiam et Acatalepsiae desperationem prudentius se sustinuerunt: atque de inquisitionis difficultate et rerum obscuritate saepius querimonias et indignationes miscentes, et veluti fraenum mordentes, tamen propositum urgere atque naturae se immiscere non destiterunt; consentaneum (ut videtur) existimantes, hoc ipsum (videlicet utrum aliquid sciri possit) non disputare, sed experiri. Et tamen illi ipsi, impetu tantum intellectus usi, regulam non adhibuerunt, sed omnia in acri meditatione et mentis volutatione et agitatione perpetua posuerunt.

Nostra autem ratio, ut opere ardua, ita dictu facilis est. Ea enim est, ut certitudinis gradus constituamus, sensum per reductionem quandam tueamur, sed mentis opus quod sensum subsequitur plerunque rejiciamus; novam autem et certam viam, ab ipsis sensuum perceptionibus, menti aperiamus et muniamus. Atque hoc proculdubio viderunt et illi qui tantas dialecticae partes tribuerunt. Ex quo liquet, illos intellectui adminicula quaesivisse, mentis autem processum nativum et sponte moventem, suspectum habuisse. Sed serum plane rebus perditis hoc adhibetur remedium; postquam mens ex quotidiana vitae consuetudine, et auditionibus et doctrinis inquinatis occupata, et vanissimis idolis obsessa fuerit. Itaque ars illa dialecticae, sero (ut diximus) cavens, neque

rem ullo modo restituens, ad errores potius figendos quam ad veritatem aperiendam valuit. Restat unica salus ac sanitas, ut opus mentis universum de integro resumatur; ac mens, jam ab ipso principio, nullo modo sibi permittatur, sed perpetuo regatur; ac res veluti per machinas conficiatur. Sane si homines opera mechanica nudis manibus, absque instrumentorum vi et ope, aggressi essent, quemadmodum opera intellectualia nudis fere mentis viribus tractare non dubitarunt, parvae admodum fuissent res quas movere et vincere potuissent, licet operas enixas atque etiam conjunctas praestitissent. Atque si paulisper morari, atque in hoc ipsum exemplum, veluti in speculum, intueri velimus; exquiramus (si placet) si forte obeliscus aliquis magnitudine insignis ad triumphi vel hujusmodi magnificentiae decus transferendus esset, atque id homines nudis manibus aggrederentur, annon hoc magnae cujusdam esse dementiae spectator quispiam rei sobrius fateretur? Quod si numerum augerent operariorum, atque hoc modo se valere posse confiderent, annon tanto magis? Sin autem delectum quendam adhibere vellent, atque imbecilliores separare, et robustis tantum et vigentibus uti, atque hinc saltem se voti compotes fore sperarent, annon adhuc eos impensius delirare diceret? Quin etiam si hoc ipso non contenti, artem tandem athleticam consulere statuerent, ac omnes deinceps manibus et lacertis et nervis ex arte bene unctis et medicatis adesse juberent, annon prorsus eos dare operam ut cum ratione quadam et prudentia insanirent, clamaret? Atque homines tamen simili malesano impetu et conspiratione inutili feruntur in intellectualibus; dum ab ingeniorum vel multitudine et consensu vel excellentia et acumine magna sperant, aut etiam dialectica (quae quaedam athletica censeri possit) mentis nervos roborant; sed interim, licet tanto studio et conatu, (si quis vere judicaverit) intellectum nudum applicare non desinunt. Manifestissimum autem est, in omni opere magno, quod manus hominis praestat, sine instrumentis et machinis, vires nec singulorum intendi nec omnium coire posse.

Itaque ex his quae diximus praemissis, statuimus duas esse res de quibus homines plane monitos volumus, ne forte illae eos fugiant aut praetereant. Quarum prima hujusmodi est; fieri fato quodam (ut existimamus) bono, ad extinguendas et depellendas contradictiones et tumores animorum, ut et

veteribus honor et reverentia intacta et imminuta maneant, et nos destinata perficere et tamen modestiae nostrae fructum percipere possimus. Nam nos, si profiteamur nos meliora afferre quam antiqui, eandem quam illi viam ingressi, nulla verborum arte efficere possimus, quin inducatur quaedam ingenii vel excellentiae vel facultatis comparatio sive contentio; non ea quidem illicita aut nova; — quidni enim possimus pro jure nostro (neque eo ipso alio, quam omnium) si quid apud eos non recte inventum aut positum sit, reprehendere aut notare? — sed tamen utcunque justa aut permissa, nihilominus impar fortasse fuisset ea ipsa contentio, ob virium nostrarum modum. Verum quum per nos illud agatur, ut alia omnino via intellectui aperiatur illis intentata et incognita, commutata jam ratio est; cessant studium et partes; nosque indicis tantummodo personam sustinemus, quod mediocris certe est authoritatis, et fortunae cujusdam potius quam facultatis et excellentiae. Atque haec moniti species ad personas pertinet; altera ad res ipsas.

Nos siquidem de deturbanda ea quae nunc floret philosophia, aut si quae alia sit aut erit hac emendatior aut auctior, minime laboramus. Neque enim officimus, quin philosophia ista recepta, et aliae id genus, disputationes alant, sermones ornent, ad professoria munera et vitae civilis compendia adhibeantur et valeant. Quin etiam aperte significamus et declaramus, eam quam nos adducimus philosophiam ad istas res admodum utilem non futuram. Non praesto est, neque in transitu capitur, neque ex praenotionibus intellectui blanditur, neque ad vulgi captum nisi per utilitatem et effecta descendet.

Sint itaque (quod foelix faustumque sit utrique parti) duae doctrinarum emanationes, ac duae dispensationes; duae similiter contemplantium sive philosophantium tribus ac veluti cognationes; atque illae neutiquam inter se inimicae aut alienae, sed foederatae et mutuis auxiliis devinctae: sit denique alia scientias colendi, alia inveniendi ratio. Atque quibus prima potior et acceptior est, ob festinationem, vel vitae civilis rationes, vel quod illam alteram ob mentis infirmitatem capere et complecti non possint (id quod longe plurimis accidere necesse est), optamus ut iis foeliciter et ex voto succedat quod agunt, atque ut quod sequuntur teneant. Quod si cui mortalium cordi et curae sit, non tantum

inventis haerere atque iis uti, sed ad ulteriora penetrate; atque non disputando adversarium, sed opere naturam vincere; denique, non belle et probabiliter opinari, sed certo et ostensive scire; tales, tanquam veri scientiarum filii, nobis (si videbitur) se adjungant; ut omissis naturae atriis, quae infiniti contriverunt, aditus aliquando ad interiora patefiat. Atque ut melius intelligamur, utque illud ipsum quod volumus ex nominibus impositis magis familiariter occurrat, altera ratio sive via Anticipatio Mentis, altera Interpretatio Naturae, a nobis appellari consuevit.

Est etiam quod petendum videtur. Nos certe cogitationem suscepimus et curam adhibuimus, ut quae a nobis proponentur non tantum vera essent, sed etiam ad animos hominum (licet miris modis occupatos et interclusos) non incommode aut aspere accederent. Veruntamen aequum est, ut ab hominibus impetremus (in tanta praesertim doctrinarum et scientiarum restauratione) ut qui de hisce nostris aliquid, sive ex sensu proprio, sive ex authoritatum turba, sive ex demonstrationum formis (quae nunc tanquam leges quaedam judicialis invaluerunt), statuere aut existimare velit, ne id in transitu et velut aliud agendo facere se posse speret; sed ut rem pernoscat; nostram, quam describimus et munimus, viam ipse paullatim tentet; subtilitati rerum quae in experientia signata est assuescat; pravos denique atque alte haerentes mentis habitus tempestiva et quasi legitima mora corrigat; atque tum demum (si placuerit) postquam in potestate sua esse coeperit, judicio suo utatur.

SEQUITUR

PARTIS SECUNDAE SUMMA,

DIGESTA

IN APHORISMOS.

PARTIS SECUNDAE

SUMMA,

DIGESTA

IN

APHORISMOS.

APHORISMI

DE INTERPRETATIONE

NATURAE

ET REGNO HOMINIS.

APHORISMUS.

I.

HOMO, naturae minister et interpres, tantum facit et intelligit quantum de naturae ordine re vel mente observaverit: nec amplius scit, aut potest.

II.

Nec manus nuda, nec intellectus sibi permissus, multum valet; instrumentis et auxiliis res perficitur; quibus opus est, non minus ad intellectum, quam ad manum. Atque ut instrumenta manus motum aut cient aut regunt; ita et instrumenta mentis intellectui aut suggerunt aut cavent.

III.

Scientia et potentia humana in idem coincidunt, quia ignoratio causae destituit effectum. Natura enim non nisi parendo vincitur: et quod in contemplatione instar causae est, id in operatione instar regulae est.

IV.

Ad opera nil aliud potest homo, quam ut corpora naturalia admoveat et amoveat: reliqua natura intus transigit.

V.

Solent se immiscere naturae (quoad opera) mechanicus, mathematicus, medicus, alchemista, et magus; sed omnes (ut nunc sunt res) conatu levi, successu tenui.

VI.

Insanum quiddam esset, et in se contrarium, existimare ea, quae adhuc nunquam facta sunt, fieri posse, nisi per modos adhuc nunquam tentatos.

VII.

Generationes mentis et manus numerosae admodum videntur in libris et opificiis. Sed omnis ista varietas sita est in subtilitate eximia, et derivationibus paucarum rerum, quae innotuerunt; non in numero axiomatum.

VIII.

Etiam opera, quae jam inventa sunt, casui debentur et experientiae, magis quam scientiis: scientiae enim, quas nunc habemus, nihil aliud sunt quam quaedam concinnationes rerum antea inventarum; non modi inveniendi, aut designationes novorum operum.

IX.

Causa vero et radix fere omnium malorum in scientiis ea una est; quod dum mentis humanae vires falso miramur et extollimus, vera ejus auxilia non quaeramus.

X.

Subtilitas naturae subtilitatem sensus et intellectus multis partibus superat; ut pulchrae illae meditationes et speculationes humanae et causationes res malesana sint, nisi quod non adsit qui advertat.

XI.

Sicut scientiae, quae nunc habentur, inutiles sunt ad inventionem operum; ita et logica, quae nunc habetur, inutilis est ad inventionem scientiarum.

XII.

Logica, quae in usu est, ad errores (qui in notionibus vulgaribus fundantur) stabiliendos et figendos valet, potius quam ad inquisitionem veritatis; ut magis

damnosa sit, quam utilis.

XIII.

Syllogismus ad principia scientiarum non adhibetur, ad media axiomata frustra adhibetur, cum sit subtilitati naturae longe impar. Assensum itaque constringit, non res.

XIV.

Syllogismus ex propositionibus constat, propositiones ex verbis, verba notionum tesserae sunt. Itaque si notiones ipsae (id quod basis rei est) confusae sint, et temere a rebus abstractae; nihil in iis, quae superstruuntur, est firmitudinis. Itaque spes est una in inductione vera.

XV.

In notionibus nil sani est, nec in logicis, nec in physicis: non substantia, non qualitas, agere, pati, ipsum esse, bonae notiones sunt; multo minus grave, leve, densum, tenue, humidum, siccum , generatio, corruptio, attrahere, fugare, elementum, materia, forma, et id genus; sed omnes phantasticae et male terminatae.

XVI.

Notiones infimarum specierum, hominis, canis, columbae, et prehensionum immediatarum sensus, calidi, frigidi, albi, nigri, non fallunt magnopere; quae tamen ipsae a fluxu materiae et commissione rerum quandoque confunduntur; reliquae omnes (quibus homines hactenus usi sunt) aberrationes sunt, nec debitis modis a rebus abstractae et excitatae.

XVII.

Nec minor est libido et aberratio in constituendis axiomatibus, quam in notionibus abstrahendis; idque in ipsis principiis, quae ab inductione vulgari pendent. At multo major est in axiomatibus, et propositionibus inferioribus, quae educit syllogismus.

XVIII.

Quae adhuc inventa sunt in scientiis, ea hujusmodi sunt, ut notionibus vulgaribus fere subjaceant: ut vero ad interiora et remotiora naturae penetretur, necesse est ut tam notiones quam axiomata magis certa et munita via a rebus abstrahantur, atque omnino melior et certior intellectus adoperatio in usum veniat.

XIX.

Duae viae sunt, atque esse possunt, ad inquirendam et inveniendam veritatem. Altera a sensu et particularibus advolat ad axiomata maxime generalia, atque ex iis principiis eorumque immota veritate judicat et invenit axiomata media; atque haec via in usu est. Altera a sensu et particularibus excitat axiomata, ascendendo continenter et gradatim, ut ultimo loco perveniatur ad maxime generalia; quae via vera est, sed intentata.

XX.

Eandem ingreditur viam (priorem scilicet) intellectus sibi permissus, quam facit ex ordine dialecticae. Gestit enim mens exsilire ad magis generalia, ut acquiescat; et post parvam moram fastidit experientiam: sed haec mala demum aucta sunt a dialectica ob pompas disputationum.

XXI.

Intellectus sibi permissus, in ingenio sobrio et patiente et gravi (praesertim si a doctrinis receptis non impediatur), tentat nonnihil illam alteram viam, quae recta est, send exiguo profectu; cum intellectus, nisi regatur et juvetur, res inaequalis sit, et omnino inhabilis ad superandam rerum obscuritatem.

XXII.

Utraque via orditur a sensu et particularibus, et acquiescit in maxime generalibus: sed immensum quiddam discrepant; cum altera perstringat tantum experientiam et particularia cursim; altera in iis rite et ordine versetur; altera rursus jam a principio constituat generalia quaedam abstracta et inutilia; altera gradatim exsurgat ad ea quae revera naturae sunt notiora.

XXIII.

Non leve quiddam interest inter humanae mentis idola, et divinae mentis ideas; hoc est, inter placita quaedam inania, et veras signaturas atque impressiones factas in creaturis, prout inveniuntur.

XXIV.

Nullo modo fieri potest, ut axiomata per argumentationem constituta ad inventionem novorum operum valeant; quia subtilitas naturae subtilitatem argumentandi multis partibus superat. Sed axiomata, a particularibus rite et ordine abstrata, nova particularia rursus facile indicant et designant; itaque scientias reddunt activas. XXV.

Axiomata, quae in usu sunt, ex tenui et manipulari experientia, et paucis particularibus, quae ut plurimum occurrunt, fluxere; et sunt fere ad mensuram eorum facta et extensa: ut nil mirum sit, si ad nova particularia non ducant. Quod si forte instantia aliqua, non prius animadversa aut cognita, se offerat, axioma distinctione aliqua frivola salvatur, ubi emendari ipsum verius foret.

XXVI.

Rationem humanam, qua utimur ad naturam, anticipationes naturae (quia res temeraria est et praematura), at illam rationem quae debitis modis elicitur a rebus, interpretationem naturae, docendi gratia, vocare consuevimus.

XXVII.

Anticipationes satis firmae sunt ad consensum; quandoquidem, si homines etiam insanirent ad unum modum et conformiter, illi satis bene inter se congruere possent.

XXVIII.

Quin longe validiores sunt ad subeundum assensum anticipationes, quam interpretationes; quia ex paucis collectae, iisque maxime quae familiariter occurrunt, intellectum statim perstringunt, et phantasiam implent; ubi contra, interpretationes, ex rebus admodum variis et multum distantibus sparsim collectae, intellectum subito percutere non possunt; ut necesse sit eas, quoad opiniones, duras et absonas, fere instar mysteriorum fidei videri.

XXIX.

In scientiis, quae in opinionibus et placitis fundatae sunt, bonus est usus anticipationum et dialecticae; quando opus est assensum subjugare, non res.

XXX.

Non, si omnia omnium aetatum ingenia coierint, et labores contulerint et transmiserint, progressus magnus fieri poterit in scientiis per anticipationes: quia errores radicales, et in prima digestione mentis, ab excellentia functionum et remediorum sequentium non curantur.

XXXI.

Frustra magnum expectatur augmentum in scientiis ex superinductione et insitione novorum super vetera; sed instauratio facienda est ab imis fundamentis, nisi libeat perpetuo circumvolvi in orbem, cum exili et quasi contemnendo progressu.

XXXII.

Antiquis auctoribus suus constat honos, atque adeo omnibus; quia non ingeniorum aut facultatum inducitur comparatio, sed viae; nosque non judicis, sed indicis personam sustinemus.

XXXIII.

Nullum (dicendum enim est aperte) recte fieri potest judicium nec de via nostra, nec de iis quae secundum eam inventa sunt, per anticipationes (rationem scilicet quae in usu est), quia non postulandum est ut ejus rei judicio stetur, quae ipsa in judicium vocatur.

XXXIV.

Neque etiam tradendi aut explicandi ea, quae adducimus, facilis est ratio; quia, quae in se nova sunt, intelligentur tamen ex analogia veterum.

XXXV.

Dixit Borgia de expeditione Gallorum in Italiam, eos venisse cum creta in manibus, ut diversoria notarent, non cum armis, ut perrumperent. Itidem et nostra ratio est, ut doctrina nostra animos idoneos et capaces subintret; confutationum enim nullus est usus, ubi de principiis et ipsis notionibus, atque etiam de formis demonstrationum dissentimus.

XXXVI.

Restat vero nobis modus tradendi unus et simplex, ut homines ad ipsa particularia et eorum series et ordines adducamus; et ut illi rursus imperent sibi ad tempus abnegationem notionum, et cum rebus ipsis consuescere incipiant.

XXXVII.

Ratio eorum, qui acatalepsiam tenuerunt, et via nostra initiis suis quodammodo consentiunt; exitu immensum disjunguntur et opponuntur. Illi enim nihil sciri

posse simpliciter asserunt; nos, non multum sciri posse in natura, ea, quae nunc in usu est, via: verum illi exinde authoritatem sensus et intellectus destruunt; nos auxilia iisdem excogitamus et subministramus.

XXXVIII.

Idola et notiones falsae, quae intellectum humanum jam occuparunt atque in eo alte haerent, non solum mentes hominum ita obsident, ut veritati aditus difficilis pateat; sed etiam dato et concesso aditu, illa rursus in ipsa instauratione scientiarum occurrent et molesta erunt; nisi homines praemoniti adversus ea se, quantum fieri potest, muniant.

XXXIX.

Quatuor sunt genera idolorum, quae mentes humanas obsident. Iis (docendi gratia) nomina imposuimus; ut primum genus, idola tribus; secundum, idola specus; tertium, idola fori; quartum, idola theatri, vocentur.

XL.

Excitatio notionum et axiomatum per inductionem veram est certe proprium remedium ad idola arcenda et summovenda; sed tamen indicatio idolorum magni est usus. Doctrina enim de idolis similiter se habet ad interpretationem naturae, sicut doctrina de sophisticis elenchis ad dialecticam vulgarem.

XLI.

Idola tribus sunt fundata in ipsa natura humana, atque in ipsa tribu seu gente hominum. Falso enim asseritur, sensum humanum esse mensuram rerum; quin contra, omnes perceptiones, tam sensus quam mentis, sunt ex analogia hominis, non ex analogia universi. Estque intellectus humanus instar speculi inaequalis ad radios rerum, qui suam naturam naturae rerum immiscet, eamque distorquet et inficit.

XLII.

Idola specus sunt idola hominis individui. Habet enim unusquisque (praeter aberrationes naturae humanae in genere) specum sive cavernam quandam individuam, quae lumen naturae frangit et corrumpit: vel propter naturam cujusque propriam et singularem; vel propter educationem et conversationem cum aliis; vel propter lectionem librorum, et authoritates eorum quos quisque colit et miratur; vel propter differentias impressionum, prout occurrunt in animo praeoccupato et praedisposito, aut in animo aequo et sedato, vel ejusmodi: ut plane spiritus humanus (prout disponitur in hominibus singulis) sit res varia, et omnino perturbata, et quasi fortuita. Unde bene Heraclitus, homines scientias quaerere in minoribus mundis, et non in majore sive communi.

XLIII.

Sunt etiam idola tanquam ex contractu et societate humani generis ad invicem, quae idola fori, propter hominum commercium et consortium, appellamus. Homines enim per sermones sociantur; at verba ex captu vulgi imponuntur. Itaque mala et inepta verborum impositio miris modis intellectum obsidet. Neque definitiones aut explicationes, quibus homines docti se munire et vindicare in nonnullis consueverunt, rem ullo modo restituunt. Sed verba plane vim faciunt intellectui, et omnia turbant; et homines ad inanes et innumeras controversias et commenta deducunt.

XLIV.

Sunt denique idola, quae immigrarunt in animos hominum ex diversis dogmatibus philosophiarum, ac etiam ex perversis legibus demonstrationum; quae idola theatri nominamus; quia quot philosophiae receptae aut inventae sunt, tot fabulas productas et actas censemus, quae mundos effecerunt fictitios et scenicos. Neque de his quae jam habentur, aut etiam de veteribus philosophiis et sectis tantum loquimur, cum complures aliae ejusmodi fabulae componi et

concinnari possint; quandoquidem errorum prorsus diversorum causae sint nihilominus fere communes. Neque rursus de philosophiis universalibus tantum hoc intelligimus, sed etiam de principiis et axiomatibus compluribus scientiarum, quae ex traditione et fide et neglectu invaluerunt. Verum de singulis istis generibus idolorum, fusius et distinctius dicendum est, ut intellectui humano cautum sit.

XLV.

Intellectus humanus ex proprietate sua facile supponit majorem ordinem et aequalitatem in rebus, quam invenit: et cum multa sint in natura monodica, et plena imparitatis, tamen affingit parallela, et correspondentia, et relativa, quae non sunt. Hinc commenta illa, in coelestibus omnia moveri per circulos perfectos, lineis spiralibus et draconibus (nisi nomine tenus) prorsus rejectis. Hinc elementum ignis cum orbe suo introductum est ad constituendum quaternionem cum reliquis tribus, quae subjiciuntur sensui. Etiam elementis (quae vocant) imponitur ad placitum decupla proportio excessus in raritate ad invicem; et hujusmodi somnia. Neque vanitas ista tantum valet in dogmatibus, verum etiam in notionibus simplicibus.

XLVI.

Intellectus humanus in iis quae semel placuerunt (aut quia recepta sunt et credita, aut quia delectant), alia etiam omnia trahit ad suffragationem et consensum cum illis: et licet major sit instantiarum vis et copia, quae occurrunt in contrarium; tamen eas aut non observat, aut contemnit, aut distinguendo summovet et rejicit, non sine magno et pernicioso praejudicio, quo prioribus illis syllepsibus authoritas maneat inviolata. Itaque recte respondit ille, qui, cum suspensa tabula in templo ei monstraretur eorum qui vota solverant, quod naufragii periculo elapsi sint, atque interrogando premeretur, anne tum quidem Deorum numen agnosceret, quaesivit denuo, At ubi sunt illi depicti qui post vota nuncupata perierint? Eadem ratio est fere omnis superstitionis, ut in astrologicis, in somniis,

ominibus, nemesibus, et hujusmodi; in quibus homines delectati hujusmodi vanitatibus advertunt eventus, ubi emplentur; ast ubi fallunt, licet multo frequentius, tamen negligunt et praetereunt. At longe subtilius serpit hoc malum in philosophiis et scientiis; in quibus quod semel placuit, reliqua (licet multo firmiora et potiora) inficit, et in ordinem redigit. Quinetiam licet abfuerit ea, quam diximus, delectatio et vanitas, is tamen humano intellectui error est proprius et perpetuus, ut magis moveatur et excitetur affirmativis, quam negativis; cum rite et ordine aequum se utrique praebere debeat; quin contra, in omni axiomate vero constituendo, major est vis instantiae negativae.

XLVII.

Intellectus humanus illis, quae simul et subito mentem ferire et subire possunt, maxime movetur; a quibus phantasia impleri et inflari consuevit: reliqua vero modo quodam, licet imperceptibili, ita se habere fingit et supponit, quomodo se habent pauca illa quibus mens obsidetur; ad illum vero transcursum ad instantias remotas et heterogeneas, per quas axiomata tanquam igne probantur, tardus omnino intellectus est, et inhabilis, nisi hoc illi per duras leges et violentum imperium imponatur.

XLVIII.

Gliscit intellectus humanus, neque consistere aut acquiescere potis est, sed ulterius petit; at frustra. Itaque incogitabile est ut sit aliquid extremum aut extimum mundi, sed semper quasi necessario occurrit ut sit aliquid ulterius. Neque rursus cogitari potest quomodo aeternitas defluxerit ad hunc diem; cum distinctio illa, quae recipi consuevit, quod sit infinitum a parte ante, et a parte post, nullo modo constare possit; quia inde sequeretur, quod sit unum infinitum alio infinito majus, atque ut consumatur infinitum, et vergat ad finitum. Similis est subtilitas de lineis semper divisibilibus, ex impotentia cogitationis. At majore cum pernicie intervenit haec impotentia mentis in inventione causarum: nam cum maxime universalia in natura positiva esse debeant, quemadmodum

inveniuntur, neque sunt revera causabilia; tamen intellectus humanus, nescius acquiescere, adhuc appetit notiora. Tum vero, ad ulteriora tendens, ad proximiora recidit, videlicet ad causas finales, quae sunt plane ex natura hominis, potius quam universi: atque ex hoc fonte philosophiam miris modis corruperunt. Est autem aeque imperiti et leviter philosophantis, in maxime universalibus causam requirere, ac in subordinatis et subalternis causam non desiderare.

XLIX.

Intellectus humanus luminis sicci non est; sed recipit infusionem a voluntate et affectibus, id quod generat ad quod vult scientias: quod enim mavult homo verum esse, id potius credit. Rejicit itaque difficilia, ob inquirendi impatientiam; sobria, quia coarctant spem; altiora naturae, propter superstitionem; lumen experientiae, propter arrogantiam et fastum, ne videatur mens versari in vilibus et fluxis; paradoxa, propter opinionem vulgi; denique innumeris modis, iisque interdum imperceptibilibus, affectus intellectum imbuit et inficit.

L.

At longe maximum impedimentum et aberratio intellectus humani provenit a stupore et incompetentia et fallaciis sensuum; ut ea, quae sensum feriunt, illis, quae sensum immediate non feriunt, licet potioribus, praeponderent. Itaque contemplatio fere desinit cum aspectu; adeo ut rerum invisibilium exigua aut nulla sit observatio. Itaque omnis operatio spirituum in corporibus tangibilibus inclusorum latet, et homines fugit. Omnis etiam subtilior meta schematismus in partibus rerum crassiorum (quem vulgo alterationem vocant, cum sit revera latio per minima) latet similiter: et tamen nisi duo ista, quae diximus, explorata fuerint et in lucem producta, nihil magni fieri potest in natura quoad opera. Rursus ipsa natura aeris communis et corporum omnium, quae aerem tenuitate superant (quae plurima sunt), fere incognita est. Sensus enim per se res infirma est, et aberrans: neque organa ad amplificandos sensus aut acuendos multum valent;

sed omnis verior interpretatio naturae conficitur per instantias, et experimenta idonea et apposita; ubi sensus de experimento tantum, experimentum de natura et re ipsa judicat.

LI.

Intellectus humanus fertur ad abstracta propter naturam propriam; atque ea, quae fluxa sunt, fingit esse constantia. Melius autem est naturam secare, quam abstrahere; id quod Democriti schola fecit, quae magis penetravit in naturam, quam reliquae. Materia potius considerari debet, et ejus schematismi, et meta-schematismi, atque actus purus, et lex actus sive motus; formae enim commenta animi humani sunt, nisi libeat leges illas actus formas appellare.

LII.

Hujusmodi itaque sunt idola, quae vocamus idola tribus; quae ortum habent aut ex aequalitate substantiae spiritus humani; aut ex praeoccupatione ejus; aut ab angustiis ejus; aut ab inquieto motu ejus; aut ab infusione affectuum; aut ab incompetentia sensuum; aut ab impressionis modo.

LIII.

Idola specus ortum habent ex propria cujusque natura et animi et corporis; atque etiam ex educatione, et consuetudine, et fortuitis. Quod genus, licet sit varium et mulitplex, tamen ea proponemus, in quibus maxima cautio est, quaeque plurimum valent ad polluendum intellectum, ne sit purus.

LIV.

Adamant homines scientias et contemplationes particulares; aut quia authores et inventores se earum credunt; aut quia plurimum in illis operae posuerunt, iisque maxime assueverunt. Hujusmodi vero homines, si ad philosophiam et contemplationes universales se contulerint, illas ex prioribus phantasiis

detorquent, et corrumpunt; id quod maxime conspicuum cernitur in Aristotele, qui naturalem suam philosophiam logicae suae prorsus mancipavit, ut eam fere inutilem et contentiosam reddiderit. Chemicorum autem genus, ex paucis experimentis fornacis, philosophiam constituerunt phantasticam, et ad pauca spectantem: quinetiam Gilbertus, postquam in contemplationibus magnetis se laboriosissime exercuisset, confinxit statim philosophiam consentaneam rei apud ipsum praepollenti.

LV.

Maximum et velut radicale discrimen ingeniorum, quoad philosophiam et scientias, illud est; quod alia ingenia sint fortiora et aptiora ad notandas rerum differentias; alia, ad notandas rerum similitudines. Ingenia enim constantia et acuta figere contemplationes, et morari, et haerere in omni subtilitate differentiarum possunt: ingenia autem sublimia et discursiva etiam tenuissimas et catholicas rerum similitudines et agnoscunt et componunt: utrumque autem ingenium facile labitur in excessum, prensando aut gradus rerum, aut umbras.

LVI.

Reperiuntur ingenia alia in admirationem antiquitatis, alia in amorem et amplexum novitatis effusa; pauca vero ejus temperamenti sunt, ut modum tenere possint, quin aut quae recte posita sunt ab antiquis convellant, aut ea contemnant quae recte afferuntur a novis. Hoc vero magno scientiarum et philosophiae detrimento fit, quum studia potius sint antiquitatis et novitatis, quam judicia: veritas autem non a felicitate temporis alicujus, quae res varia est; sed a lumine naturae et experientiae, quod aeternum est, petenda est. Itaque abneganda sunt ista studia; et videndum, ne intellectus ab illis ad consensum abripiatur.

LVII.

Contemplationes naturae et corporum in simplicitate sua intellectum frangunt et comminuunt; contemplationes vero naturae et corporum in compositione et configuratione sua intellectum stupefaciunt et solvunt. Id optime cernitur in schola Leucippi et Democriti, collata cum reliquis philosophiis. Illa enim ita versatur in particulis rerum, ut fabricas fere negligat; reliquae autem ita fabricas intuentur attonitae, ut ad simplicitatem naturae non penetrent: itaque alternandae sunt contemplationes istae, et vicissim sumendae; ut intellectus reddatur simul penetrans et capax; et evitentur ea, quae diximus, incommoda, atque idola ex iis provenientia.

LVIII.

Talis itaque esto prudentia contemplativa in arcendis et summovendis idolis specus; quae aut ex praedominantia, aut ex excessu compositionis et divisionis, aut ex studiis erga tempora, aut ex objectis largis et minutis, maxime ortum habent. Generaliter autem pro suspecto habendum unicuique rerum naturam contemplanti quicquid intellectum suum potissimum capit et detinet; tantoque major adhibenda in hujusmodi placitis est cautio, ut intellectus servetur aequus et purus.

LIX.

At idola fori omnium molestissima sunt; quae ex foedere verborum et nominum se insinuarunt in intellectum. Credunt enim homines, rationem suam verbis imperare. Sed fit etiam ut verba vim suam super intellectum retorqueant et reflectant; quod philosophiam et scientias reddidit sophisticas et inactivas. Verba autem plerunque ex captu vulgi induntur, atque per lineas vulgari intellectui maxime conspicuas res secant. Quum autem intellectus acutior, aut observatio diligentior, eas lineas transferre velit, ut illae sint magis secundum naturam; verba obstrepunt. Unde fit, ut magnae et solennes disputationes hominum doctorum saepe in controversias circa verba et nomina desinant; a quibus (ex more et prudentia mathematicorum) incipere consultius foret, easque per

definitiones in ordinem redigere. Quae tamen definitiones, in naturalibus et materiatis, huic malo mederi non possunt; quoniam et ipsae definitiones ex verbis constant, et verba gignunt verba: adeo ut necesse sit ad instantias particulares, earumque series et ordines recurrere; ut mox dicemus, quum ad modum et rationem constituendi notiones et axiomata deventum fuerit.

LX.

Idola, quae per verba intellectui imponuntur, duorum generum sunt; aut enim sunt rerum nomina, quae non sunt (quemadmodum enim sunt res, quae nomine carent per inobservationem; ita sunt et nomina, quae carent rebus, per suppositionem phantasticam), aut sunt nomina rerum, quae sunt, sed confusa et male terminata, et temere et inaequaliter a rebus abstracta. Prioris generis sunt, fortuna, primum mobile, planetarum orbes, elementum ignis, et hujusmodi commenta, quae a vanis et falsis theoriis ortum habent. Atque hoc genus idolorum facilius ejicitur, quia per constantem abnegationem et antiquationem theoriarum exterminari possunt.

At alterum genus perplexum est, et alte haerens; quod ex mala et imperita abstractione excitatur. Exempli gratia, accipiatur aliquod verbum (humidum, si placet), et videamus quomodo sibi constent quae per hoc verbum significantur: et invenietur verbum istud, humidum, nihil aliud quam nota confusa diversarum actionum, quae nullam constantiam aut reductionem patiuntur. Significat enim et quod circa aliud corpus facile se circumfundit; et quod in se est indeterminabile, nec consistere potest; et quod facile cedit undique; et quod facile se dividit et dispergit; et quod facile se unit et colligit; et quod facile fluit et in motu ponitur; et quod alteri corpori facile adhaeret, idque madefacit; et quod facile reducitur in liquidum, sive colliquatur, cum antea consisteret. Itaque quum ad hujus nominis praedicationem et impositionem ventum sit; si alia accipias, flamma humida est; si alia accipias, aer humidus non est; si alia, pulvis minutus humidus est; si alia, vitrum humidum est: ut facile appareat istam notionem ex aqua tantum et

communibus et vulgaribus liquoribus, absque ulla debita verificatione, temere abstractam esse.

In verbis autem gradus sunt quidam pravitatis et erroris. Minus vitiosum genus est nominum substantiae alicujus, praesertim specierum infirmarum, et bene deductarum (nam notio cretae, luti, bona; terrae, mala): vitiosius genus est actionum, ut generare, corrumpere, alterare: vitiosissimum qualitatum (exceptis objectis sensus immediatis), ut gravis, levis, tenuis, densi, etc.; et tamen in omnibus istis fieri non potest, quin sint aliae notiones aliis paulo meliores, prout in sensum humanum incidit rerum copia.

LXI.

At idola theatri innata non sunt, nec occulto insinuata in intellectum; sed ex fabulis theoriarum, et perversis legibus demonstrationum, plane indita et recepta. In his autem confutationes tentare et suscipere consentaneum prorsus non est illis, quae a nobis dicta sunt. Quum enim nec de principiis consentiamus, nec de demonstrationibus, tollitur omnis argumentatio. Id vero bono fit fato, ut antiquis suus constet honos. Nihil enim illis detrahitur, quum de via omnino quaestio sit. Claudus enim (ut dicitur) in via antevertit cursorem extra viam. Etiam illud manifesto liquet, currenti extra viam, quo habilior sit et velocior, eo majorem contingere aberrationem.

Nostra vero inveniendi scientias ea est ratio, ut non multum ingeniorum acumini et robori relinquatur; sed quae ingenia et intellectus fere exaequet. Quemadmodum enim ad hoc ut linea recta fiat, aut circulus perfectus describatur, multum est in constantia et exercitatione manus, si fiat ex vi manus propria, sin autem adhibeatur regula, aut circinus, parum aut nihil; omnino similis est nostra ratio. Licet autem confutationum particularium nullus sit usus; de sectis tamen et generibus hujusmodi theoriarum nonnihil dicendum est; atque etiam paulo post de signis exterioribus, quod se male habeant; et postremo de causis tantae infelicitatis et tam diuturni et generalis in errore consensus; ut ad

vera minus difficilis sit aditus, et intellectus humanus volentius expurgetur et idola dimittat.

LXII.

Idola theatri, sive theoriarum, multa sunt, et multo plura esse possunt, et aliquando fortasse erunt. Nisi enim per multa jam saecula hominum ingenia circa religionem et theologiam occupata fuissent; atque etiam politiae civiles (praesertim monarchiae) ab istiusmodi novitatibus, etiam in contemplationibus, essent aversae; ut cum periculo et detrimento fortunarum suarum in illas homines incumbant, non solum praemio destituti, sed etiam contemptui et invidiae expositi; complures aliae proculdubio philosophiarum et theoriarum sectae, similes illis, quae magna varietate olim apud Graecos floruerunt introductae fuissent. Quemadmodum enim super phaenomena aetheris plura themata coeli confingi possunt; similiter, et multo magis, super phaenomena philosophiae fundari possunt et constitui varia dogmata. Atque hujusmodi theatri fabulae habent etiam illud, quod in theatro poetarum usu venit; ut narrationes fictae ad scenam narrationibus ex historia veris concinniores sint et elegantiores, et quales quis magis vellet.

In genere autem, in materiam philosophiae sumitur aut multum ex paucis, aut parum ex multis; ut utrinque philosophia super experientiae et naturalis historiae nimis angustam basin fundata sit, atque ex paucioribus, quam par est, pronunciet. Rationale enim genus philosophantium ex experientia arripiunt varia et vulgaria, eaque neque certo comperta, nec diligenter examinata et pensitata; reliqua in meditatione atque ingenii agitatione ponunt.

Est et aliud genus philosophantium, qui in paucis experimentis sedulo et accurate elaborarunt, atque inde philosophias educere et confingere ausi sunt; reliqua miris modis ad ea detorquentes.

Est et tertium genus eorum, qui theologiam et traditiones ex fide et veneratione immiscent; inter quos vanitas nonnullorum ad petendas et

derivandas scientias a spiritibus scilicet et geniis deflexit; ita ut stirps errorum et philosophia falsa genere triplex sit: sophistica, empirica, et superstitiosa.

LXIII.

Primi generis exemplum in Aristotele maxime conspicuum est, qui philosophiam naturalem dialectica sua corrupit: quum mundum ex categoriis effecerit; animae humanae, nobilissimae substantiae, genus ex vocibus secundae intentionis tribuerit; negotium densi et rari, per quod corpora subeunt majores et minores dimensiones sive spatia, per frigidam distinctionem actus et potentiae transegerit; motum singulis corporibus unicum et proprium, et, si participent ex alio motu, id aliunde moveri, asseruerit: et innumera alia, pro arbitrio suo, naturae rerum imposuerit: magis ubique sollicitus quomodo quis respondendo se explicet, et aliquid reddatur in verbis positivum, quam de interna rerum veritate; quod etiam optime se ostendit in comparatione philosophiae ejus ad alias philosophias quae apud Graecos celebrabantur. Habent enim homoiomera Anaxagorae, atomi Leucippi et Democriti, coelum et terra Parmenidis, lis et amicitia Empedoclis, resolutio corporum in adiaphoram naturam ignis et replicatio eorundem ad densum Heracliti, aliquid ex philosopho naturali; et rerum naturam, et experientiam, et corpora sapiunt; ubi Aristotelis physica nihil aliud quam dialecticae voces plerunque sonet: quam etiam in metaphysicis sub solenniore nomine, et ut magis scilicet realis, non nominalis, retractavit. Neque illud quenquam moveat, quod in libris ejus De animalibus, et in Problematibus, et in aliis suis tractatibus, versatio frequens sit in experimentis. Ille enim prius decreverat, neque experientiam ad constituenda decreta et axiomata rite consuluit; sed postquam pro arbitrio suo decrevisset, experientiam ad sua placita tortam circumducit et captivam; ut hoc etiam nomine magis accusandus sit, quam sectatores ejus moderni (scholasticorum philosophorum genus) qui experientiam omnino deseruerunt.

LXIV.

At philosophiae genus empiricum placita magis deformia et monstrosa educit, quam sophisticum aut rationale genus; quia non in luce notionum vulgarium (quae licet tenuis sit et superficialis, tamen est quodammodo universalis, et ad multa pertinens) sed in paucorum experimentorum angustiis et obscuritate fundatum est. Itaque talis philosophia illis, qui in hujusmodi experimentis quotidie versantur atque ex ipsis phantasiam contaminarunt, probabilis videtur et quasi certa; caeteris, incredibilis et vana. Cujus exemplum notabile est in chemicis, eorumque dogmatibus; alibi autem vix hoc tempore invenitur, nisi forte in philosophia Gilberti. Sed tamen circa hujusmodi philosophias cautio nullo modo praetermittenda erat; quia mente jam praevidemus et auguramur, si quando homines, nostris monitis excitati, ad experientiam se serio contulerint (valere jussis doctrinis sophisticis), tum demum, propter praematuram et praeproperam intellectus festinationem, et saltum sive volatum ad generalia et rerum principia, fore ut magnum ab hujusmodi philosophiis periculum immineat; cui malo etiam nunc obviam ire debemus.

LXV.

At corruptio philosophiae ex superstitione, et theologia admista, latius omnino patet, et plurimum mali infert, aut in philosophias integras, aut in earum partes. Humanus enim intellectus non minus impressionibus phantasiae est obnoxius, quam impressionibus vulgarium notionum. Pugnax enim genus philosophiae et sophisticum illaqueat intellectum: at illud alterum phantasticum, et tumidum, et quasi poeticum, magis blanditur intellectui. Inest enim homini quaedam intellectus ambitio, non minor quam voluntatis; praesertim in ingeniis altis et elevatis.

Hujus autem generis exemplum inter Graecos illucescit, praecipue in Pythagora, sed cum superstitione magis crassa et onerosa conjunctum; at periculosius et subtilius in Platone atque ejus schola. Invenitur etiam hoc genus mali in partibus philosophiarum reliquarum, introducendo formas abstractas, et causas finales, et causas primas; omittendo saepissime medias, et hujusmodi.

Huic autem rei summa adhibenda est cautio. Pessima enim res est errorum apotheosis, et pro peste intellectus habenda est, si vanis accedat veneratio. Huic autem vanitati nonnulli ex modernis summa levitate ita indulserunt, ut in primo capitulo Geneseos, et in libro Job, et aliis Scripturis sacris, philosophiam naturalem fundare conati sint; inter viva quaerentes mortua. Tantoque magis haec vanitas inhibenda venit, et coercenda, quia ex divinorum et humanorum malesana admistione non solum educitur philosophia phantasica, sed etiam religio haeretica. Itaque salutare admodum est, si mente sobria fidei tantum dentur quae fidei sunt.

LXVI.

Et de malis authoritatibus philosophiarum, quae aut in vulgaribus notionibus, aut in paucis experimentis, aut in superstitione fundatae sunt, jam dictum est. Dicendum porro est et de vitiosa materia contemplationum, praesertim in philosophia naturali. Inficitur autem intellectus humanus ex intuitu eorum quae in artibus mechanicis fiunt, in quibus corpora per compositiones aut separationes ut plurimum alterantur; ut cogitet simile quiddam etiam in natura rerum universali fieri. Unde fluxit commentum illud elementorum, atque illorum concursu, ad constituenda corpora naturalia Rursus, quum homo naturae libertatem contemplatur, incidit in species rerum, animalium, plantarum, mineralium; unde facile in eam labitur cogitationem, ut existimet esse in natura quasdam formas rerum primarias, quas natura educere molitur: atque reliquam varietatem ex impedimentis et aberrationibus naturae in opere suo conficiendo, aut ex diversarum specierum conflictu, et transplantatione alterius in alteram, provenire. Atque prima cogitatio qualitates primas elementares, secunda proprietates occultas et virtutes specificas nobis peperit; quarum utraque pertinet ad inania contemplationum compendia, in quibus acquiescit animus et a solidioribus avertitur. At medici in secundis rerum qualitatibus et operationibus, attrahendi, repellendi, attenuandi, inspissandi, dilatandi, astringendi, discutiendi, maturandi, et hujusmodi, operam praestant meliorem; atque, nixi ex illis duobus

(quae dixi) compendiis (qualitatibus scilicet elementaribus, et virtutibus specificis) illa altera (quae recte notata sunt) corrumperent, reducendo illa ad primas qualitates earumque mixturas subtiles et incommensurabiles, aut ea non producendo cum majore et diligentiore observatione ad qualitates tertias et quartas, sed contemplationem intempestive abrumpendo, illi multo melius profecissent. Neque hujusmodi virtutes (non dico eaedem, sed similes) in humani corporis medicinis tantum exquirendae sunt; sed etiam in caeterorum corporum naturalium mutationibus.

Sed multo adhuc majore cum malo fit, quod quiescentia rerum principia, ex quibus; et non moventia, per quae res fiunt, contemplentur et inquirant. Illa enim ad sermones, ista ad opera spectant. Neque enim vulgars illae differentiae motus, quae in naturali philosophia recepta notantur, generationis, corruptionis, augmentationis, diminutionis, alterationis, et lationis, ullius sunt pretii. Quippe hoc sibi volunt; si corpus, alias non mutatum, loco tamen moveatur, hoc lationem esse; si, manente et loco et specie, qualitate mutetur, hoc alterationem esse; si vero ex illa mutatione moles ipsa et quantitas corporis non eadem maneat, hoc augmentationis et diminutionis motum esse; si eatenus mutentur, ut speciem ipsam et substantiam mutent, et in alia migrent, hoc generationem et corruptionem esse. At ista mere popularia sunt, et nullo modo in naturam penetrant; suntque mensurae et periodi tantum, non species motus. Innuunt enim illud, hucusque, et non quomodo, vel ex quo fonte. Neque enim de corporum appetitu, aut de partium eorum processu, aliquid significant; sed tantum quum motus ille rem aliter ac prius, crasso modo, sensui exhibeat, inde divisionem suam auspicantur. Etiam quum de causis motuum aliquid significare volunt, atque divisionem ex illis instituere, differentiam motus naturalis et violenti, maxima cum socordia, introducunt; quae et ipsa omnino ex notione vulgari est; cum omnis motus violentus etiam naturalis revera sit, scilicet cum externum efficiens naturam alio modo in opere ponet quam quo prius.

At hisce omissis; si quis (exempli gratia) observaverit, inesse corporibus appetitum contactus ad invicem, ut non patiantur unitatem naturae prorsus dirimi aut abscindi, ut vacuum detur: aut si quis dicat, inesse corporibus appetitum se

recipiendi in naturalem suam dimensionem vel tensuram, ut, si ultra eam aut citra eam comprimantur aut distrahantur, statim in veterem sphaeram et exporrectionem suam se recuperare et remittere moliantur: aut si quis dicat, inesse corporibus appetitum congregationis ad massas connaturalium suorum, densorum videlicet versus orbem terrae, tenuiorum et rariorum versus ambitum coeli: haec et hujusmodi vere physica sunt genera motuum. At illa altera plane logica sunt et scholastica, ut ex hac collatione eorum manifesto liquet.

Neque minus etiam malum est, quod in philosophiis et contemplationibus suis, in principiis rerum atque ultimatibus naturae investigandis et tractandis, opera insumatur; cum omnis utilitas et facultas operandi in mediis consistat. Hinc fit, ut abstrahere naturam homines non desinant, donec ad materiam potentialem et informem ventum fuerit; nec rursus secare naturam desinant, donec perventum fuerit ad atomum; quae, etiamsi vera essent, tamen ad juvandas hominum fortunas parum possunt.

LXVII.

Danda est etiam cautio intellectui de intemperantiis philosophiarum, quoad assensum praebendum aut cohibendum; quia hujusmodi intemperantiae videntur idola figere, et quodammodo perpetuare, ne detur aditus ad ea summovenda.

Duplex autem est excessus: alter eorum, qui facile pronunciant, et scientias reddunt positivas et magistrales; alter eorum, qui acatalepsiam introduxerunt, et inquisitionem vagam sine termino; quorum primus intellectum deprimit, alter enervat. Nam Aristotelis philosophia, postquam caeteras philosophias (more Ottomanorum erga fratres suos) pugnacibus confutationibus contrucidasset, de singulis pronunciavit; et ipse rursus quaestiones ex arbitrio suo subornat, deinde conficit; ut omnia certa sint et decreta: quod etiam apud successiones suas valet et in usu est.

At Platonis schola acatalepsiam introduxit, primo tanquam per jocum et ironiam, in odium veterum sophistarum, Protagorae, Hippiae, et reliquorum, qui nihil tam verebantur, quam ne dubitare de re aliqua viderentur. At nova

academia acatalepsiam dogmatizavit, et ex professo tenuit: quae licet honestior ratio sit, quam pronunciandi licentia, quum ipsi pro se dicant se minime confundere inquisitionem, ut Pyrrho fecit et Ephectici, sed habere quod sequantur ut probabile, licet non habeant quod teneant ut verum; tamen postquam animus humanus de veritate invenienda semel desperaverit, omnino omnia fiunt languidiora: ex quo fit, ut deflectant homines potius ad amoenas disputationes et discursus, et rerum quasdam peragrationes, quam in severitate inquisitionis se sustineant. Verum, quod a principio diximus et perpetuo agimus, sensui et intellectui humano eorumque infirmitati authoritas non est deroganda, sed auxilia praebenda.

LXVIII.

Atque de idolorum singulis generibus, eorumque apparatu jam diximus; quae onmia constanti et solenni decreto sunt abneganda et renuncianda, et intellectus ab iis omnino liberandus est et expurgandus; ut non alius fere sit aditus ad regnum hominis, quod fundatur in scientiis, quam ad regnum coelorum, in quod, nisi sub persona infantis, intrare non datur.

LXIX.

At pravae demonstrationes, idolorum veluti munitiones quaedam sunt et praesidia; eaeque, quas in dialecticis habemus, id fere agunt, ut mundum plane cogitationibus humanis, cogitationes autem verbis addicant et mancipent. Demonstrationes vero potentia quadam philosophiae ipsae sunt et scientiae. Quales enim eae sunt, ac prout rite aut male institutae, tales sequuntur philosophiae et contemplationes. Fallunt autem et incompetentes sunt eae quibus utimur in universo illo processu, qui a sensu et rebus ducit ad axiomata et conclusiones. Qui quidem processus quadruplex est, et vitia ejus totidem. Primo, impressiones sensus ipsius vitiosae sunt; sensus enim et destituit et fallit. At destitutionibus substitutiones, fallaciis rectificationes debentur. Secundo, notiones ab impressionibus sensuum male abstrahuntur, et interminatae et

confusae sunt, quas terminatas et bene finitas esse oportuit. Tertio, inductio mala est, quae per enumerationem simplicem principia concludit scientiarum, non adhibitis exclusionibus et solutionibus, sive separationibus naturae debitis. Postremo, modus ille inveniendi et probandi, ut primo principia maxime generalia constituantur, deinde media axiomata ad ea applicentur et probentur, errorum mater est, et scientiarum omnium calamitas. Verum de istis, quae jam obiter perstringimus, fusius dicemus, quum veram interpretandae naturae viam, absolutis istis expiationibus et expurgationibus mentis, proponemus.

LXX.

Sed demonstratio longe optima est experientia; modo haereat in ipso experimento. Nam si traducatur ad alia quae similia existimantur, nisi rite et ordine fiat illa traductio, res fallax est. At modus experiendi, quo homines nunc utuntur, caecus est et stupidus. Itaque cum errant et vagantur nulla via certa, sed ex occursu rerum tantum consilium capiunt, circumferuntur ad multa, sed parum promovent; et quandoque gestiunt, quandoque distrahuntur; et semper inveniunt quod ulterius quaerant. Fere autem ita fit, ut homines leviter et tanquam per ludum experiantur, variando paululum experimenta jam cognita; et, si res non succedat, fastidiendo et conatum deserendo. Quod si magis serio et constanter ac laboriose ad experimenta se accingant, tamen in uno aliquo experimento eruendo operam collocant; quemadmodum Gilbertus in magnete, Chymici in auro. Hoc autem faciunt homines instituto non minus imperito quam tenui. Nemo enim alicujus rei naturam in ipsa re feliciter perscrutatur; sed amplianda est inquisitio ad magis communia.

Quod si etiam scientiam quandam et dogmata ex experimentis moliantur; tamen semper fere studio praepropero et intempestivo deflectunt ad praxin: non tantum propter usum et fructum ejusmodi praxeos, sed ut in opere aliquo novo veluti pignus sibi arripiant, se non inutiliter in reliquis versaturos: atque etiam aliis se venditent, ad existimationem meliorem comparandam de iis in quibus occupati sunt. Ita fit ut, more Atalantae, de via decedant ad tollendum aureum

pomum; interim vero cursum interrumpant, et victoriam emittant e manibus. Verum in experientiae vero curriculo eoque ad nova opera producendo, Divina Sapientia omnino et ordo pro exemplari sumenda sunt. Deus autem primo die creationis lucem tantum creavit, eique operi diem integrum attribuit; nec aliquid materiati operis eo die creavit. Similiter et ex omnimoda experientia, primum inventio causarum et axiomatum verorum elicienda est: et lucifera experimenta, non fructifera quaerenda. Axiomata autem recte inventa et constituta praxin non strictim sed confertim instruunt; et operum agmina ac turmas post se trahunt. Verum de experiendi viis, quae non minus quam viae judicandi obsessae sunt et interclusae, postea dicemus; impraesentiarum de experientia vulgari, tanquam de mala demonstratione, tantum loquuti. Jam vero postulat ordo rerum, ut de iis quorum paulo ante mentionem fecimus, signis, quod philosophiae et contemplationes in usu male se habeant, et de causis rei primo intuitu tam mirabilis et incredibilis, quaedam subjungamus. Signorum enim notio praeparat assensum: causarum vero explicatio tollit miraculum. Quae duo ad extirpationem idolorum ex intellectu faciliorem et clementiorem multum juvant.

LXXI.

Scientiae, quas habemus, fere a Graecis fluxerunt. Quae enim scriptores Romani, aut Arabes, aut recentiores addiderunt, non multa aut magni momenti sunt: et qualiacunque sint, fundata sunt super basin eorum quae inventa sunt a Graecis. Erat autem sapientia Graecorum professoria, et in disputationes effusa: quod genus inquisitioni veritatis adversissimum est. Itaque nomen illud sophistarum, quod per contemptum ab iis, qui se philosophos haberi voluerunt, in antiquos rhetores rejectum et traductum est, Gorgiam, Protagoram, Hippiam, Polum, etiam universo generi competit, Platoni, Aristoteli, Zenoni, Epicuro, Theophrasto, et eorum successoribus, Chrysippo, Carneadi, reliquis. Hoc tantum intererat: quod prius genus vagum fuerit et mercenarium, civitates circumcursando, et sapientiam suam ostentando, et mercedem exigendo; alterum vero solennius et generosius, quippe eorum qui sedes fixas habuerunt, et scholas

aperuerunt, et gratis philosophati sunt. Sed tamen utrumque genus (licet caetera dispar) professorium erat, et ad disputationes rem deducebat, et sectas quasdam atque haereses philosophiae instituebat et propugnabat: ut essent fere doctrinae eorum (quod non male cavillatus est Dionysius in Platonem) Verba otiosorum senum ad imperitos juvenes. At antiquiores illi ex Graecis, Empedocles, Anaxagoras, Leucippus, Democritus, Parmenides, Heraclitus, Xenophanes, Philolaus, reliqui (nam Pythagoram, ut superstitiosum, omittimus), scholas (quod novimus) non aperuerunt: sed majore silentio, et severius, et simplicius, id est, minore cum affectatione et ostentatione, ad inquisitionem veritatis se contulerunt. Itaque et melius, ut arbitramur, se gesserunt; nisi quod opera eorum a levioribus istis, qui vulgari captui et affectui magis respondent ac placent, tractu temporis extincta sint: tempore (ut fluvio) leviora et magis inflata ad nos devehente, graviora et solida mergente. Neque tamen isti a nationis vitio prorsus immunes erant: sed in ambitionem et vanitatem sectae condendae et aurae popularis captandae nimium propendebant. Pro desperata autem habenda est veritatis inquisitio, cum ad hujusmodi inania deflectat. Etiam non omittendum videtur judicium illud, sive vaticinium potius, sacerdotis Aegyptii de Graecis: Quod semper pueri essent; neque haberent antiquitatem scientiae, aut scientiam antiquitatis. Et certe habent id quod puerorum est; ut ad garriendum prompti sint, generare autem non possint: nam verbosa videtur sapientia eorum, et operum sterilis. Itaque ex ortu et gente philosophiae quae in usu est, quae capiuntur signa bona non sunt.

LXXII.

Neque multo meliora sunt signa quae ex natura temporis et aetatis capi possunt, quam quae ex natura loci et nationis. Angusta enim erat et tenuis notitia per illam aetatem vel temporis vel orbis: quod longe pessimum est, praesertim iis qui mnia in experientia ponunt. Neque enim mille annorum historiam, quae digna erat nomine historiae, habebant; sed fabulas et rumores antiquitatis. Regionum vero tractuumque mundi exiguam partem noverant: cum omnes hyperboreos,

Scythas, omnes occidentales, Celtas indistincte appellarent; nil in Africa ultra citimam Aethiopiae partem, nil in Asia ultra Gangem, multo minus novi orbis provincias, ne per auditum sane aut famam aliquam certam et constantem, nossent; imo et plurima climata et zonae, in quibus populi infiniti spirant et degunt, tanquam inhabitabiles ab illis pronuntiata sint; quinetiam peregrinationes Democriti, Platonis, Pythagorae, non longinquae profecto, sed potius suburbanae, ut magnum aliquid celebrarentur. Nostris autem temporibus, et novi orbis partes complures et veteris orbis extrema undique innotescunt; et in infinitum experimentorum cumulus excrevit. Quare si ex nativitatis aut geniturae tempore (astrologorum more) signa capienda sint, nil magni de istis philosophiis significari videtur.

LXXIII.

Inter signa, nullum magis certum aut nobile est, quam quod ex fructibus. Fructus enim et opera inventa pro veritate philosophiarum velut sponsores et fidejussores sunt. Atque ex philosophiis istis Graecorum, et derivationibus earum per particulares scientias, jam per tot annorum spatia, vix unum experimentum adduci potest, quod ad hominum statum levandum et juvandum spectet, et philosophiae speculationibus ac dogmatibus vere acceptum referri possit. Idque Celsus ingenue ac prudenter fatetur; nimirum, experimenta medicinae primo inventa fuisse, ac postea homines circa ea philosophatos esse et causas indagasse et assignasse; non ordine inverso evenisse, ut ex philosophia et causarum cognitione ipsa experimenta inventa aut deprompta essent. Itaque mirum non erat, apud Aegyptios (qui rerum inventoribus divinitatem et consecrationem attribuerunt) plures fuisse brutorum animalium imagines quam hominum: quia bruta animalia, per instinctus naturales, multa inventa perpererunt; ubi homines, ex sermonibus et conclusionibus rationalibus, pauca aut nulla exhibuerint.

At Chymicorum industria nonnulla peperit; sed tanquam fortuito et obiter, aut per experimentorum quandam variationem (ut mechanici solent), non ex arte aut theoria aliqua; nam ea, quam confinxerunt, experimenta magis perturbat, quam

juvat. Eorum etiam, qui in magia (quam vocant) naturali versati sunt, pauca reperiuntur inventa; eaque levia, et imposturae propiora. Quocirca, quemadmodum in religione cavetur, ut fides ex operibus monstretur; idem etiam ad philosophiam optime traducitur, ut ex fructibus judicetur et vana habeatur quae sterilis sit: atque eo magis si, loco fructuum uvae et olivae, producat disputationum et contentionum carduos et spinas.

LXXIV.

Capienda etiam sunt signa ex incrementis et progressibus philosophiarum et scientiarum. Quae enim in natura fundata sunt, crescunt et augentur: quae autem in opinione, variantur, non augentur. Itaque si istae doctrinae plane instar plantae a stirpibus suis revulsae non essent, sed utero naturae adhaererent atque ab eadem alerentur, id minime eventurum fuisset, quod per annos bis mille jam fieri videmus: nempe, ut scientiae suis haereant vestigiis, et in eodem fere statu maneant, neque augmentum aliquod memorabile sumpserint; quin potius in primo authore maxime floruerint, et deinceps declinaverint. In artibus autem mechanicis, quae in natura et experientiae luce fundatae sunt, contra evenire videmus: quae (quamdiu placent) veluti spiritu quodam repletae continuo vegetant et crescunt; primo rudes, deinde commodae, postea excultae, et perpetuo auctae.

LXXV.

Etiam aliud signum capiendum est (si modo signi appellatio huic competat; cum potius testimonium sit, atque adeo testimoniorum omnium validissimum); hoc est, propria confessio authorum, quos homines nunc sequuntur. Nam et illi qui tanta fiducia de rebus pronuntiant, tamen per intervalla cum ad se redeunt, ad querimonias de naturae subtilitate, rerum obscuritate, humani ingenii infirmitate, se convertunt. Hoc vero si simpliciter fieret, alios fortasse, qui sunt timidiores, ab ulteriori inquisitione deterrere, alios vero, qui sunt ingenio alacriori et magis fidenti, ad ulteriorem progressum acuere et incitare possit. Verum non satis illis

est de se confiteri, sed quicquid sibi ipsis aut magistris suis incognitum aut intactum fuerit id extra terminos possibilis ponunt, et tanquam ex arte cognitu aut factu impossiblile pronuntiant: summa superbia et invidia suorum inventorum infirmitatem in naturae ipsius calumniam et aliorum omnium desperationem vertentes. Hinc schola Academiae novae, quae acatalepsiam ex professo tenuit, et homines ad sempiternas tenebras damnavit. Hinc opinio, quod formae sive verae rerum differentiae (quae revera sunt leges actus puri) inventu impossibiles sint, et ultra hominem. Hinc opiniones illae in activa et operativa parte: calorem solis et ignis toto genere differre; ne scilicet homines putent se per opera ignis aliquid simile iis quae in natura fiunt educere et formare posse. Hinc illud: compositionem tantum opus hominis, mistionem vero opus solius naturae esse; ne scilicet homines sperent aliquam ex arte corporum naturalium generationem aut transformationem. Itaque ex hoc signo homines sibi persuaderi facile patientur, ne cum dogmatibus non solum desperatis, sed etiam desperationi devotis, fortunas suas et labores misceant.

LXXVI.

Neque illud signum praetermittendum est, quod tanta fuerit inter philosophos olim dissensio et scholarum ipsarum varietas: quod satis ostendit, viam a sensu ad intellectum non bene munitam fuisse, cum eadem materia philosophiae (natura scilicet rerum) in tam vagos et multiplices errores abrepta fuerit et distracta. Atque licet hisce temporibus dissensiones et dogmatum diversitates circa principia ipsa, et philosophias integras, ut plurimum extinctae sint; tamen circa partes philosophiae innumerae manent quaestiones et controversiae; ut plane appareat, neque in philosophiis ipsis, neque in modis demonstrationum aliquid certi aut sani esse.

LXXVII.

Quod vero putant homines, in philosophia Aristotelis magnum utique consensum esse; cum post illam editam antiquorum philosophiae cessaverint et exoleverint;

ast apud tempora, quae sequuta sunt, nil melius inventum fuerit; adeo ut illa tam bene posita et fundata videatur, ut utrumque tempus ad se traxerit: primo, quod de cessatione antiquarum philosophiarum post Aristotelis opera edita homines cogitant, id falsum est; diu enim postea, usque ad tempora Ciceronis et secula sequentia, manserunt opera veterum philosophorum. Sed temporibus insequentibus, ex inundatione Barbarorum in imperium Romanum, postquam doctrina humana velut naufragium perpessa esset; tum demum philosophiae Aristotelis et Platonis, tanquam tabulae ex materia leviore et minus solida, per fluctus temporum servatae sunt. Illud etiam de consensu fallit homines, si acutius rem introspiciant. Verus enim consensus is est, qui ex libertate judicii (re prius explorata) in idem conveniete consistit. At numerus longe maximus eorum, qui in Aristotelis philosophiam consenserunt, ex praejudicio et authoritate aliorum se illi mancipavit: ut sequacitas sit potius et coitio, quam consensus. Quod si fuisset ille verus consensus et late patens, tantum abest ut consensus pro vera et solida authoritate haberi debeat, ut etiam violentam praesumptionem inducat in contrarium. Pessimum enim omnium est augurium, quod ex consensu capitur in rebus intellectualibus: exceptis divinis et politicis, in quibus suffragiorum jus est. Nihil enim multis placet, nisi imaginationem feriat, aut intellectum vulgarium notionum nodis astringat, ut supra dictum est. Itaque optime traducitur illud Phocionis a moribus ad intellectualia: Ut statim se examinare debeant homines, quid erraverint aut peccaverint, si multitudo consentiat et complaudat. Hoc signum igitur ex aversissimis est. Itaque quod signa veritatis et sanitatis philosophiarum et scientiarum, quae in usu sunt, male se habeant; sive capiantur ex originibus ipsarum, sive ex fructibus, sive ex progressibus, sive ex confessionibus authorum, sive ex consensu; jam dictum est.

LXXVIII.

Jam vero veniendum ad causas errorum, et tam diuturnae in illis per tot secula morae; quae plurimae sunt et potentissimae: ut tollatur omnis admiratio, haec

quae adducimus homines hucusque latuisse et fugisse; et maneat tantum admiratio, illa nunc tandem alicui mortalium in mentem venire potuisse, aut cogitationem cujuspiam subiisse: quod etiam (ut nos existimamus) foelicitatis magis est cujusdam, quam excellentis alicujus facultatis; ut potius pro temporis partu haberi debeat, quam pro partu ingenii.

Primo autem tot seculorum numerus, vere rem reputanti, ad magnas angustias recidit. Nam ex viginti quinque annorum centuriis, in quibus memoria et doctrina hominum fere versatur, vix sex centuriae seponi et excerpi possunt, quae scientiarum feraces earumve proventui utiles fuerunt. Sunt enim non minus temporum quam regionum eremi et vastitates. Tres enim tantum doctrinarum revolutiones et periodi recte numerari possunt: una, apud Graecos; altera, apud Romanos; ultima, apud nos, occidentales scilicet Europae nationes: quibus singulis vix duae centuriae annorum merito attribui possunt. Media mundi tempora, quoad scientiarum segetem uberem aut laetam, infelicia fuerunt. Neque enim causa est ut vel Arabum vel scholasticorum mentio fiat: qui per intermedia tempora scientias potius contriverunt numerosis tractatibus, quam pondus earum auxerunt. Itaque prima causa tam pusilli in scientiis profectus ad angustias temporis erga illas propitii rite et ordine refertur.

LXXIX.

At secundo loco se offert causa illa magni certe per omnia momenti: ea videlicet, quod per illas ipsas aetates, quibus hominum ingenia et literae maxime vel etiam mediocriter floruerint, naturalis philosophia minimam partem humanae operae sortita sit. Atque haec ipsa nihilominus pro magna scientiarum matre haberi debet. Omnes enim artes et scientiae, ab hac stirpe revulsae, poliuntur fortasse et in usum effinguntur; sed nil admodum crescunt. At manifestum est, postquam Christiana fides recepta fuisset et adolevisset, longe maximam ingeniorum praestantissimorum praestantissimorum partem ad theologiam se contulisse; atque huic rei et amplissima praemia proposita, et omnis generis adjumenta copiosissime subministrata fuisse: atque hoc theologiae studium praecipue

occupasse tertiam illam partem sive periodum temporis apud nos Europaeos occidentales; eo magis, quod sub idem fere tempus et literae florere, et controversiae circa religionem pullulare coeperint. At aevo superiori, durante periodo illa secunda apud Romanos, potissimae philosophorum meditationes et industriae in morali philosophia (quae ethnicis vice theologiae erat) occupatae et consumptae fuerunt: etiam summa ingenia illis temporibus ut plurimum ad res civiles se applicuerunt, propter magnitudinem imperii Romani, quod plurimorum hominum opera indigebat. At illa aetas, qua naturalis philosophia apud Graecos maxime florere visa est, particula fuit temporis minime diuturna; cum et antiquioribus temporibus septem illi, qui sapientes nominabantur, omnes (praeter Thaletem) ad moralem philosophiam et civilia se applicuerint; et posterioribus temporibus postquam Socrates philosophiam de coelo in terras deduxisset, adhuc magis invaluerit moralis philosophia, et ingenia hominum a naturali averterit.

At ipsissima illa periodus temporis, in qua inquisitiones de natura viguerunt, contradictionibus et novorum placitorum ambitione corrupta est, et inutilis reddita. Itaque quandoquidem per tres istas periodos naturalis philosophia majorem in modum neglecta aut impedita fuerit, nil mirum si homines parum in ea re profecerint, cum omnino aliud egerint.

LXXX.

Accedit et illud, quod naturalis philosophia in iis ipsis viris, qui ei incubuerint, vacantem et integrum hominem, praesertim his recentioribus temporibus, vix nacta sit; nisi forte quis monachi alicujus in cellula, aut nobilis in villula lucubrantis, exemplum adduxerit: sed facta est demum naturalis philosophia instar transitus cujusdam et pontisternii ad alia.

Atque magna ista scientiarum mater mira indignitate ad officia ancillae detrusa est; quae medicinae aut mathematices operibus ministret, et rursus quae adolescentium immatura ingenia lavet et imbuat velut tinctura quadam prima, ut aliam postea foelicius et commodius excipiant. Interim nemo expectet magnum progressum in scientiis (praesertim in parte earum operativa), nisi philosophia

naturalis ad scientias particulares producta fuerit, et scientiae particulares rursus ad naturalem philosophiam reductae. Hinc enim fit, ut astronomia, optica, musica, plurimae artes mechanicae, atque ipsa medicina, atque (quod quis magis miretur) philosophia moralis et civilis, et scientiae logicae, nil fere habeant altitudinis in profundo: sed per superficiem et varietatem rerum tantum labantur: quia, postquam particulares istae scientiae dispertitae et constitutae fuerint, a philosophia naturali non amplius aluntur; quae ex fontibus et veris contemplationibus motuum, radiorum, sonorum, texturae, et schematismi corporum, affectuum, et prehensionum intellectualium, novas vires et augmenta illis impertiri potuerit. Itaque minime mirum est si scientiae non crescant, cum a radicibus suis sint separatae.

LXXXI.

Rursus se ostendit alia causa potens et magna, cur scientiae parum promoverint. Ea vero haec est; quod fieri non possit, ut recte procedatur in curriculo, ubi ipsa meta non recte posita sit et defixa. Meta autem scientiarum vera et legitima non alia est quam ut dotetur vita humana novis inventis et copiis. At turba longe maxima nihil ex hoc sapit, sed meritoria plane est et professoria; nisi forte quandoque eveniat, ut artifex aliquis acrioris ingenii, et gloriae cupidus, novo alicui invento det operam; quod fere fit cum facultatum dispendio. At apud plerosque tantum abest ut homines id sibi proponant, ut scientiarum et artium massa augmentum obtineat, ut ex ea, quae praesto est, massa nil amplius sumant aut quaerant, quam quantum ad usum professorium aut lucrum aut existimationem aut hujusmodi compendia convertere possint. Quod si quis ex tanta multitudine scientiam affectu ingenuo et propter se expetat; invenietur tamen ille ipse potius contemplationum et doctrinarum varietatem, quam veritatis severam et rigidam inquisitionem sequi. Rursus, si alius quispiam fortasse veritatis inquisitor sit severior; tamen et ille ipse talem sibi proponet veritatis conditionem, quae menti et intellectui satisfaciat in redditione causarum rerum quae jampridem sunt cognitae; non eam, quae nova operum pignora, et

novam axiomatum lucem assequatur. Itaque, si finis scientiarum a nemine adhuc bene positus sit, non mirum est si in iis, quae sunt subordinata ad finem, sequatur aberatio.

LXXXII.

Quemadmodum autem finis et meta scientiarum male posita sunt apud homines; ita rursus etiamsi illa recte posita fuissent, viam tamen sibi delegerunt omnino erroneam et imperviam. Quod stupore quodam animum rite rem reputanti perculserit; non ulli mortalium curae aut cordi fuisse, ut intellectui humano ab ipso sensu et experientia ordinata et bene condita via aperiretur et muniretur; sed omnia vel traditionum caligini, vel argumentorum vertigini et turbini, vel casus et experientiae vagae et inconditae undis et ambagibus permissa esse. Atque cogitet quis sobrie et diligenter, qualis sit ea via, quam in inquisitione et inventione alicujus rei homines adhibere consueverunt. Et primo notabit proculdubio inveniendi modum simplicem et inartificiosum, qui hominibus maxime est familiaris. Hic autem non alius est, quam ut is, qui se ad inveniendum aliquid comparat et accingit, primo quae ab aliis circa illa dicta sint inquirat et evolvat; deinde propriam meditationem addat, atque per mentis multam agitationem spiritum suum proprium sollicitet, et quasi invocet, ut sibi oracula pandat: quae res omnino sine fundamento est, et in opinionibus tantum volvitur.

At alius quispiam dialecticam ad inveniendum advocet, quae nomine tenus tantum ad id quod agitur pertinet. Inventio enim dialecticae non est principiorum et axiomatum praecipuorum, ex quibus artes constant, sed eorum tantum quae illis consentanea videntur. Dialectica enim magis curiosos et importunos, et sibi negotium facessentes, eamque interpellantes de probationibus et inventionibus principiorum, sive axiomatum primorum, ad fidem, et veluti sacramentum cuilibet arti praestandum, notissimo responso rejicit.

Restat experientia mera: quae, si occurrat, casus; si quaesita sit, experimentum nominatur. Hoc autem experientiae genus nihil aliud est, quam

(quod aiunt) scopae dissolutae, et mera palpatio, quali homines noctu utuntur, omnia pertentando, si forte in rectam viam incidere detur; quibus multo satius et consultius foret diem praestolari, aut lumen accendere, et deinceps viam inire. At contra, verus experientiae ordo primo lumen accendit, deinde per lumen iter demonstrat, incipiendo ab experientia ordinata et digesta, et minime praepostera aut erratica, atque ex ea educendo axiomata, atque ex axiomatibus constitutis rursus experimenta nova; quum nec verbum divinum in rerum massam absque ordine operatum sit.

Itaque desinant homines mirari si spatium scientiarum non confectum sit, cum a via omnino aberraverint; relicta prorsus et deserta experientia, aut in ipsa (tanquam in labyrintho) se intricando, et circumcursando; cum rite institutus ordo per experientiae sylvas ad aperta axiomatum tramite constanti ducat.

LXXXIII.

Excrevit autem mirum in modum istud malum ex opinione quadam, sive aestimatione inveterata, verum tumida et damnosa; minui nempe mentis humanae majestatem, si experimentis, et rebus particularibus sensui subjectis et in materia detriminatis, diu ac multum versetur: praesertim quum hujusmodi res ad inquirendum laboriosae, ad meditandum ignobiles, ad dicendum asperae, ad practicam illiberales, numero infinitae, et subtilitate tenues esse soleant. Itaque jam tandem huc res rediit, ut via vera non tantum deserta, sed etiam interclusa et obstructa sit; fastidita experientia, nedum relicta, aut male administrata.

LXXXIV.

Rursus vero homines a progressu in scientiis detinuit et fere incantavit reverentia antiquitatis, et virorum, qui in philosophia magni habiti sunt, authoritas, atque deinde consensus. Atque de consensu superius dictum est.

De antiquitate autem opinio, quam homines de ipsa fovent, negligens omnino est, etvix verbo ipsi congrua. Mundi enim senium et gradaevitas pro antiquitate vere habenda sunt; quae temporibus nostris tribui debent, non juniori aetati

mundi, qualis apud antiquos fuit. Illa enim aetas, respectu nostri, antiqua et major; respectu mundi ipsius, nova et minor fuit. Atque revera quemadmodum majorem rerum humanarum notitiam et maturius judicium ab homine sene expectamus quam a juvene, propter experientiam et rerum, quas vidit, et audivit, et cogitavit, varietatem et copiam; eodem modo et a nostra aetate (si vires suas nosset, et experiri et intendere vellet) majora multo quam a priscis temporibus expectari par est; utpote aetate mundi grandiore, et infinitis experimentis et observationibus aucta et cumulata.

Neque pro nihilo aestimandum, quod per longinquas navigationes et peregrinationes (quae seculis nostris increbuerunt) plurima in natura patuerint, et reperta sint, quae novam philosophiae lucem immittere possint. Quin et turpe hominibus foret, si globi materialis tractus, terrarum videlicet, marium, astrorum, nostris temporibus immensum aperti et illustrati sint; globi autem intellectualis finis inter veterum inventa et angustias cohibeantur.

Authores vero quod attinet, summae pusillanimitatis est authoribus infinita tribuere, authori autem authorum, atque adeo omnis authoritatis, Tempori, jus suum denegare. Recte enim Veritas Temporis filia dicitur, non Authoritatis. Itaque mirum non est, si fascina ista antiquitatis et authorum et consensus, hominum virtutem ita ligaverint, ut cum rebus ipsis consuescere (tanquam maleficiati) non potuerint.

LXXXV.

Neque solum admiratio antiquitatis, authoritatis, et consensus, hominum industriam in iis, quae jam inventa sunt, acquiescere compulit; verum etiam operum ipsorum admiratio, quorum copia jampridem facta est humano generi. Etenim quum quis rerum varietatem, et pulcherrimum apparatum qui per artes mechanicas ad cultum humanum congestus et introductus est, oculis subjecerit, eo certe inclinabit, ut potius ad opulentiae humanae admirationem, quam ad inopiae sensum accedat; minime advertens primitivas hominis observationes atque naturae operationes (quae ad omnem illam varietatem instar animae sunt,

et primi motus) nec multas, nec alte petitas esse; caetera ad patientiam hominum tantum, et subtilem et ordinatum manus vel intrumentorum motum, pertinere. Res enim (exempli gratia) subtilis est certe et accurata confectio horologiorum, talis scilicet, quae coelestia in rotis, pulsum animalium in motu successivo et ordinato, videatur imitari; quae tamen res ex uno aut altero naturae axiomate pendet.

Quod si quis rursus subtilitatem illam intueatur quae ad artes liberales pertinet; aut etiam eam quae ad corporum naturalium praeparationem per artes mechanicas spectat, et hujusmodi res suspiciat; veluti inventionem motuum coelestium in astronomia, concentuum in musica, literarum alphabeti (quae etiam adhuc in regno Sinarum in usu non sunt) in grammatica; aut rursus in mechanicis, factorum Bacchi et Cereris, hoc est, praeparationum vini et cervisiae, panificiorum, aut etiam mensae delitiarum, et distillationum, et similium: ille quoque, si secum cogitet, et animum advertat, per quantos temporum circuitus (cum haec omnia, praeter distillationes, antiqua fuerint) haec ad eam, quam nunc habemus, culturam perducta sint, et (ut jam de horologiis dictum est) quam parum habeant ex observationibus et axiomatibus naturae, atque quam facile, et tanquam per occasiones obvias et contemplationes incurrentes, ista inveniri potuerint: ille (inquam) ab omni admiratione se facile liberabit, et potius humanae conditionis miserebitur, quod per tot secula tanta fuerit rerum et inventorum penuria et sterilitas. Atque haec ipsa tamen, quorum nunc mentionem fecimus, inventa, philosophia et artibus intellectus antiquiora fuerunt: adeo ut(si verum dicendum sit) cum hujusmodi scientiae rationales et dogmaticae inceperint, inventio operum utilium desierit.

Quod si quis ab officinis ad bibliothecas se converterit, et immensam, quam videmus, librorum varietatem in admiratione habuerit, is, examinatis et diligentius introspectis ipsorum librorum materiis et contentis, obstupescet certe in contrarium; et postquam nullum dari finem repetitionibus observaverit, quamque homines eadem agant et loquantur, ab admiratione varietatis transibit ad miraculum indigentiae et paucitatis earum rerum quae hominum mentes adhuc tenuerunt et occuparunt.

Quod si quis ad intuendum ea, quae magis curiosa habentur quam sana, animum submiserit, et alchymistarum aut magorum opera penitius introspexerit, is dubitabit forsitan utrum risu an lachrymis potius illa digna sint. Alchymista enim spem alit aeternam, atque ubi res non succedit errores proprios reos substituit; secum accusatorie reputando, se aut artis aut authorum vocabula non satis intellexisse, unde ad traditiones et auriculares susurros animum applicat; aut in practicae suae scrupulis et momentis aliquid titubatum esse, unde experimenta in infinitum repetit: ac interim quum inter experimentorum sortes in quaedam incidit aut ipsa facie nova aut utilitate non contemnenda; hujusmodi pignoribus animum pascit, eaque in majus ostentat et celebrat: reliqua spe sustentat. Neque tamen negandum est, alchymistas non pauca invenisse, et inventis utilibus homines donasse. Verum fabula illa non male in illos quadrat de sene, qui filiis aurum in vinea defossum (sed locum se nescire simulans) legaverit; unde illi vineae fodiendae diligenter incubuerunt, et aurum quidem nullum repertum, sed vindemia ex ea cultura facta est uberior.

At naturalis magiae cultores, qui per rerum sympathias et antipathias omnia expediunt, ex conjecturis otiosis et supinissimis, rebus virtutes et operationes admirabiles affinxerunt; atque si quando opera exhibuerint, ea illius sunt generis, ut ad admirationem et novitatem, non ad fructum et utilitatem, accommodata sint.

In superstitiosa autem magia (si et de hac dicendum sit) illud inprimis animadvertendum est, esse tantummodo certi cujusdam et definiti generis subjecta, in quibus artes curiosae et superstitiosae, per omnes nationes atque aetates atque etiam religiones, aliquid potuerint aut luserint. Itaque ista missa faciamus. Interim nil mirum est, si opinio copiae causam inopiae dederit.

LXXXVI.

Atque hominum admirationi, quoad doctrinas et artes, per se satis simplici et prope puerili, incrementum accessit ab eorum astu et artificio qui scientias tractaverunt et tradiderunt. Illi enim ea ambitione et affectatione eas proponunt,

atque in eum modum efformatas ac veluti personatas in hominum conspectum producunt, ac si illae omni ex parte perfectae essent et ad exitum perductae. Si enim methodum aspicias et partitiones, illae prorsus omnia complecti et concludere videntur, quae in illud subjectum cadere possunt. Atque licet membra illa male impleta et veluti capsulae inanes sint; tamen apud intellectum vulgarem scientiae formam et rationem integrae prae se ferunt.

At primi et antiquissimi veritatis inquisitores, meliore fide et fato, cognitionem illam, quam ex rerum contemplatione decerpere, et in usum recondere statuebant, in aphorismos, sive breves easdemque sparsas nec methodo revinctas sententias, conjicere solebant; neque se artem universam complecti simulabant aut profitebantur. At eo quo nunc res agitur modo, minime mirum est, si homines in iis ulteriora non quaerant, quae pro perfectis et numeris suis jampridem absolutis traduntur.

LXXXVII.

Etaim antiqua magnum existimationis et fidei incrementum acceperunt ex eorum vanitate et levitate, qui nova proposuerunt; praesertim in philosophiae naturalis parte activa et operativa. Neque enim defuerunt homines vaniloqui et phantastici, qui partim ex credulitate, partim ex impostura, genus humanum promissis onerarunt: vitae prolongationem, senectutis retardationem, dolorum levationem, naturalium defectuum reparationem, sensuum deceptiones, affectuum ligationes et incitationes, intellectualium facultatum illuminationes et exaltationes, substantiarum transmutationes, et motuum ad libitum roborationes et multiplicationes, aeris impressiones et alterationes, coelestium influentiarum deductiones et procurationes, rerum futurarum divinationes, remotarum repraesentationes, occultarum revelationes, et alia complura pollicitando et ostentando. Verum de istis largitoribus non multum aberraverit, qui istiusmodi judicium fecerit, tantum nimirum in doctrinis philosophiae inter horum vanitates et veras artes interesse, quantum inter res gestas Julii Caesaris, aut Alexandri Magni, et res gestas Amadicii ex Gallia, aut Arthuri ex Britannia, in historiae

narrationibus intersit. Inveniuntur enim clarissimi illi imperatores revera majora gessisse, quam umbratiles isti heroes etiam fecisse fingantur; sed modis et viis scilicet actionum minime fabulosis et prodigiosis. Neque propterea aequum est verae memoriae fidem derogari, quod a fabulis illa quandoque laesa sit et violata. Sed interim minime mirum est, si propositionibus novis (praesertim cum mentione operum) magnum sit factum praejudicium per istos impostores, qui similia tentaverunt; cum vanitatis excessus et fastidium etiam nunc omnem in ejusmodi conatibus magnanimitatem destruxerit.

LXXXVIII.

At longe majora a pusillanimitate, et pensorum, quae humana industria sibi proposuit, parvitate et tenuitate, detrimenta in scientias invecta sunt. Et tamen (quod pessimum est) pusillanimitas ista non sine arrogantia et fastidio se offert.

Primum enim, omnium artium illa reperitur cautela jam facta familiaris, ut in qualibet arte authores artis suae infirmitatem in naturae calumniam vertant; et quod ars ipsorum non assequitur, id ex eadem arte impossibile in natura pronunciant. Neque certe damnari potest ars, si ipsa judicet. Etiam philosophia, quae nunc in manibus est, in sinu suo posita quaedam fovet, aut placita, quibus (si diligentius inquiratur) hoc hominibus omnino persuaderi volunt; nil ab arte, vel hominis opere, arduum, aut in naturam imperiosum et validum, expectari debere; ut de heterogenia caloris astri et ignis, et mistione, superius dictum est. Quae si notentur accuratius, omnino pertinent ad humanae potestatis circumscriptionem malitiosam, et ad quaesitam et artificiosam desperationem, quae non solum spei auguria turbet, sed etiam omnes industriae stimulos et nervos incidat, atque ipsius experientiae aleas abjiciat; dum de hoc tantum solliciti sint, ut ars eorum perfecta censeatur; gloriae vanissimae et perditissimae dantes operam, scilicet ut quicquid adhuc inventum et comprehensum non sit, id omnino nec inveniri, nec comprehendi posse in futurum credatur. At si quis rebus addere se et novum aliquid reperire conetur, ille tamen omnino sibi proponet et destinabit unum aliquod inventum (nec ultra) perscrutari et eruere; ut

magnetis naturam, maris fluxum et refluxum, thema coeli, et hujusmodi, quae secreti aliquid habere videntur, et hactenus parum feliciter tractata sint: quum summae sit imperitiae, rei alicujus naturam in se ipsa perscrutari; quandoquidem eadem natura, quae in aliis videtur latens et occulta, in aliis manifesta sit et quasi palpabilis, atque in illis admirationem, in his ne attentionem quidem moveat; ut fit in natura consistentiae, quae in ligno vel lapide non notatur, sed solidi appellatione transmittitur, neque amplius de fuga separationis aut solutionis continuitatis inquiritur; at in aquarum bullis eadem res videtur subtilis et ingeniosa; quae bullae se conjiciunt in pelliculas quasdam, in hemisphaerii formam curiose effictas, ut ad momentum temporis evitetur solutio continuitatis.

Atque prorsus illa ipsa, quae habentur pro secretis, in aliis habent naturam manifestam et communem; quae nunquam se dabit conspiciendam, si hominum experimenta aut contemplationes in illis ipsis tantum versentur. Generaliter autem et vulgo, in operibus mechanicis habentur pro novis inventis, si quis jampridem inventa subtilius poliat, vel ornet elegantius, vel simul uniat et componat, vel cum usu commodius copulet, aut opus majore, aut etiam minore, quam fieri consuevit, mole vel volumine exhibeat, et similia.

Itaque minime mirum est, si nobila et genere humano digna inventa in lucem extracta non sint, quum homines hujusmodi exiguis pensis et puerilibus contenti et delectati fuerint; quinetiam in iisdem se magnum aliquod sequutos, aut assequutos putaverint.

LXXXIX.

Neque illud praetermittendum est, quod nacta sit philosophia naturalis per omnes aetates adversarium molestum et difficilem; superstitionem nimirum, et zelum religionis caecum et immoderatum. Etenim videre est apud Graecos, eos, qui primum causas naturales fulminis et tempestatum insuetis adhuc hominum auribus proposuerunt, impietatis in deos eo nomine damnatos: nec multo melius a nonnullis antiquorum patrum religionis Christianae exceptos fuisse eos, qui ex

certissimis demonstrationibus (quibus nemo hodie sanus contradixerit) terram rotundam esse posuerunt, atque ex consequenti antipodas esse asseruerunt.

Quinetiam, ut nunc sunt res, conditio sermonum de natura facta est durior et magis cum periculo, propter theologorum scholasticorum summas et methodos; qui cum theologiam (satis pro potestate) in ordinem redegerint, et in artis formam effinxerint, hoc insuper effecerunt, ut pugnax et spinosa Aristotelis philosophia corpori religionis, plus quam par erat, immisceretur.

Eodem etiam spectant (licet diverso modo) eorum commentationes, qui veritatem Christianae religionis ex principiis ex authoritatibus philosophorum deducere et confirmare haud veriti sunt; fidei et sensus conjugium tanquam legitimum multa pompa et solennitate celebrates, et grata rerum varietate animos hominum permulcentes; sed interim divina humanis, impari conditione, permiscentes. At in hujusmodi misturis theologiae cum philosophia, ea tantum, quae nunc in philosophia recepta sunt, comprehenduntur; sed nova, licet in melius mutata, tantum non summoventur et exterminantur.

Denique invenias, ex quorundam theologorum imperitia, aditum alicui philosophiae, quamvis emendatae, pene interclusum esse. Alii siquidem simplicius subverentur, ne forte altior in naturam inquisitio ultra concessum sobrietatis terminum penetret; traducentes et perperam torquentes ea, quae de divinis mysteriis in Scripturis sacris adversus rimantes secreta divina dicuntur, ad occulta naturae, quae nullo interdicto prohibentur. Alii callidus conjiciunt et animo versant, si media ignorentur, singula ad manum et virgulam divinam (quod religionis, ut putant, maxime intersit) facilius posse referri: quod nihil aliud est, quam Deo per mendacium gratificari velle. Alii ab exemplo metuunt, ne motus et mutationes circa philosophiam in religionem incurrant ac desinant. Alii denique solliciti videntur, ne in naturae inquisitione aliquid inveniri possit, quod religionem (praesertim apud indoctos) subvertat, aut saltem labefactet. At isti duo posteriores metus nobis videntur omnino sapientiam animalem sapere; ac si homines, in mentis suae recessibus et secretis cogitationibus de firmitudine religionis, et fidei in sensum imperio diffiderent ac dubitarent; et propterea ab inquisitione veritatis in naturalibus periculum illis impendere metuerent. At vere

rem reputanti, philosophia naturalis, post verbum Dei, certissima superstitionis medicina est; eademque probatissimum fidei alimentum. Itaque merito religioni donatur tanquam fidissima ancilla: cum altera voluntatem Dei, altera potestatem manifestet. Neque enim erravit Ille, quit dixit; erratis, nescientes Scripturas et potestatem Dei: informationem de voluntate et meditationem de potestate nexu individuo commiscens et copulans. Interim minus mirum est, si naturalis philosophiae incrementa cohibita sint; cum religio, quae plurimum apud animos hominum pollet, per quorundam imperitiam et zelum incautum in partem contrariam transierit et abrepta fuerit.

XC.

Rursus in moribus et institutis scholarum, academiarum, collegiorum, et similium conventuum, quae doctorum hominum sedibus et eruditionis culturae destinata sunt, omnia progressui scientiarum adversa inveniuntur. Lectiones enim et exercitia ita sunt disposita, ut aliud a consuetis haud facile cuiquam in mentem veniat cogitare aut contemplari. Si vero unus aut alter fortasse judicii libertate uti sustinuerit, is sibi soli hanc operam imponere possit; ab aliorum autem consortio nihil capiet utilitatis. Sin et hoc toleraverit, tamen in capessenda fortuna industriam hanc et magnanimitatem sibi non levi impedimento fore experietur. Studia enim hominum in ejusmodi locis in quorundam authorum scripta, veluti in carceres, conclusa sunt; a quibus si quis dissentiat, continuo ut homo turbidus et rerum novarum cupidus corripitur. At magnum certe discrimen inter res civiles et artes: non enim idem periculum a novo motu et a nova luce. Verum in rebus civilibus mutatio etiam in melius suspecta est ob perturbationem; cum civilia authoritate, consensu, fama, et opinione, non demonstratione, nitantur. In artibus autem et scientiis, tanquam in metalli fodinis, omnia novis operibus et ulterioribus progressibus circumstrepere debent. Atque secundum rectam rationem res ita se habet, sed interim non ita vivtur: sed ista, quam diximus, doctrinarum administratio et politia scientiarum augmenta durius premere consuevit.

XCI.

Atque insuper licet ista invidia cessaverit; tamen satis est ad cohibendum augmentum scientiarum, quod hujusmodi conatus et industriae praemiis careant. Non enim penes eosdem est cultura scientiarum et praemium. Scientiarum enim augmenta a magnis utique ingeniis proveniunt; at pretia et praemia scientiarum sunt penes vulgus aut principes viros, qui (nisi raro admodum) vix mediocriter docti sunt. Quinetiam hujusmodi progressus non solum praemiis et beneficentia hominum, verum etiam ipsa populari laude destituti sunt. Sunt enim illi supra captum maximae partis hominum, et ab opinionum vulgarium ventis facile obruuntur et extinguuntur. Itaque nil mirum, si res illa non foeliciter successerit, quae in honore non fuit.

XCII.

Sed longe maximum progressibus scientiarum, et novis pensis ac provinciis in iisdem suscipiendis, obstaculum deprehenditur in desperatione hominum, et suppositione impossibilis. Solent enim viri prudentes et severi in hujusmodi rebus plane diffidere: naturae obscuritatem, vitae brevitatem, sensuum fallacias, judicii infirmitatem, experimentorum difficultates, et similia secum reputantes. Itaque existimant, esse quosdam scientiarum, per temporum et aetatum mundi revolutiones, fluxus et refluxus; cum aliis temporibus crescant et floreant, aliis declinent et jaceant: ita tamen, ut cum ad certum quendam gradum et statum pervenerint, nil ulterius possint.

Itaque si quis majora credat aut spondeat, id putant esse cujusdam impotentis et immaturi animi; atque hujusmodi conatus initia scilicet laeta, media ardua, extrema confusa habere. Atque cum hujusmodi cogitationes eae sint, quae in viros graves et judicio praestantes facile cadant, currandum revera est, ne rei optimae et pulcherrimae amore capti severitatem judicii relaxemus, aut minuamus; et sedulo videndum, quid spei affulgeat, et ex qua parte se ostendat; atque auris levioribus spei rejectis, eae, quae plus firmitudinis habere videntur,

omnino discutiendae sunt et pensitandae. Quinetiam prudentia civilis ad consilium vocanda est et adhibenda, quae ex praescripto diffidit, et de rebus humanis in deterius conjicit. Itaque jam et de spe dicendum est; praesertim cum nos promissores non simus, nec vim aut insidias hominum judiciis faciamus aut struamus, sed homines manu et sponte ducamus. Atque licet longe potentissimum futurum sit remedium ad spem imprimendam, quando homines ad particularia, praesertim in tabulis nostris inveniendi digesta et disposita (quae partim ad secundam, sed multo magis ad quartam Instaurationis nostrae partem pertinent), adducemus; cum hoc ipsum sit non spes tantum, sed tanquam res ipsa: tamen ut omnia clementius fiant, pergendum est in instituto nostro de praeparandis hominum mentibus; cujus praeparationis ista ostensio spei pars est non exigua. Nam absque ea, reliqua faciunt magis ad contristationem hominum (scilicet, ut deteriorem et viliorem habeant de iis, quae jam in usu sunt, opinionem, quam nunc habent, et suae conditionis infortunium plus sentiant et pernoscant), quam ad alacritatem aliquam inducendam, aut industriam experiendi acuendam. Itaque conjecturae nostrae, quae spem in hac re faciunt probabilem, aperiendae sunt et proponendae: sicut Columbus fecit, ante navigationem illam suam mirabilem maris Atlantici: cum rationes adduxerit, cur ipse novas terras et continentes praeter eas, quae ante cognitae fuerunt, inveniri posse confideret: quae rationes, licet primo rejectae, postea tamen experimento probatae sunt, et rerum maximarum causae et initia fuerunt.

XCIII.

Principium autem sumendum a Deo: hoc nimirum quod agitur, propter excellentem in ipso boni naturam, manifeste a Deo esse, qui author boni, et pater luminum est. In operationibus autem divinis, initia quaeque tenuissima exitum certo trahunt. Atque quod de spiritualibus dictum est, Regnum Dei non venit cum observatione, id etiam in omni majore opere Providentiae evenire reperitur; ut omnia sine strepitu et sonitu placide labantur, atque res plane agatur priusquam homines eam agi putent aut advertant. Neque omittenda est prophetia

Danielis de ultimis mundi temporibus; Multi pertransibunt, et multiplex erit scientia: manifeste innuens et significans, esse in fatis, id est, in Providentia, ut pertransitus mundi (qui per tot longinquas navigationes impletus plane aut jam in opere esse videtur) et augmenta scientiarum in eandem aetatem incidant.

XCIV.

Sequitur ratio omnium maxima ad faciendam spem; nempe ex erroribus temporis praeteriti et viarum adhuc tentatarum. Optima enim est ea reprehensio, quam de statu civili haud prudenter administrato quispiam his verbis complexus est: Quod ad praeterita pessimum est, id ad futura optimum videri debet. Si enim vos omnia, quae ad officium vestrum spectant, praestitissetis, neque tamen res vestrae in meliore loco essent; ne spes quidem ulla reliqua foret, eas in melius provehi posse. Sed cum rerum vestrarum status, non a vi ipsa rerum, sed ab erroribus vestris male se habeat; sperandum est, illis erroribus missis aut correctis, magnam rerum in melius mutationem fieri posse. Simili modo, si homines per tanta annorum spatia viam veram inveniendi et colendi scientias tenuissent, nec tamen ulterius progredi potuissent; audax proculdubio et temeraria foret opinio, posse rem in ulterius provehi. Quod si in via ipsa erratum sit, atque hominum opera in iis consumpta, in quibus minime oportebat; sequitur ex eo, non in rebus ipsis difficultatem oriri, quae potestatis nostrae non sunt, sed in intellectu humano ejusque usu et applicatione; quae res remedium et medicinam suscipit. Itaque optimum fuerit illos ipsos errores proponere: quot enim fuerint errorum impedimenta in praeterito, tot sunt spei argumenta in futurum. Ea vero licet in his, quae superius dicta sunt, non intacta omnino fuerint; tamen ea etiam nunc breviter, verbis nudis ac simplicibus, repraesentare visum est.

XCV.

Qui tractaverunt scientias aut empirici aut dogmatici fuerunt. Empirici, formicae more, congerunt tantum, et utuntur: rationales, aranearum more, telas ex se

conficiunt: apis vero ratio media est, quae materiam ex floribus horti et agri elicit; sed tamen eam propria facultate vertit et digerit. Neque absimile philosophiae verum opificium est; quod nec mentis viribus tantum aut praecipue nititur, neque ex historia naturali et mechanicis experimentis praebitam materiam, in memoria integram, sed in intellectu mutatam et subactam, reponit. Itaque ex harum facultatum (experimentalis scilicet et rationalis) arctiore et sanctiore foedere (quod adhuc factum non est) bene sperandum est.

XCVI.

Naturalis philosophia adhuc sincera non invenitur, sed infecta et corrupta: in Aristotelis schola, per logicam, in Platonis schola, per theologiam naturalem; in secunda schola Platonis, Procli, et aliorum, per mathematicam; quae philosophiam naturalem terminare, non generare aut procreare debet. At ex philosophia naturali pura et impermista meliora speranda sunt.

XCVII.

Nemo adhuc tanta mentis constantia et rigore inventus est, ut decreverit et sibi imposuerit theorias et notiones communes penitus abolere, et intellectum abrasum et aequum ad particularia de integro applicare. Itaque ratio illa humana, quam habemus, ex multa fide, et multo etiam casu, nec non ex puerilibus, quas primo hausimus, notionibus, farrago quaedam est et congeries.

Quod si quis aetate matura, et sensibus integris, et mente repurgata, se ad experientiam et ad particularia de integro applicet, de eo melius sperandum est. Atque hac in parte nobis spondemus fortunam Alexandri Magni: neque quis nos vanitatis arguat, antequam exitum rei audiat, quae ad exuendam omnem vanitatem spectat.

Etenim de Alexandro et ejus rebus gestis Aeschines ita loquutus est: Nos certe vitam mortalem non vivimus; sed in hoc nati sumus, ut posteritas de nobis portenta narret et praedicet: perinde ac si Alexandri res gestas pro miraculo habuisset.

At aevis sequentibus Titus Livius melius rem advertit et introspexit, atque de Alexandro hujusmodi quippiam dixit: Eum non aliud quam bene ausum vana contemnere. Atque simile etiam de nobis judicium futuris temporibus factum iri existimamus: Nos nil magni fecisse; sed tantum ea, quae pro magnis habentur, minoris fecisse. Sed interim (quod jam diximus) non est spes nisi in regeneratione scientiarum; ut eae scilicet ab experientia certo ordine excitentur et rursus condantur: quod adhuc factum esse aut cogitatum nemo (ut arbitramur) affirmaverit.

XCVIII.

Atque experientiae fundamenta (quando ad hanc omnino deveniendum est) aut nulla, aut admodum infirma adhuc fuerunt; nec particularium sylva et materies, vel numero, vel genere, vel certitudine, informando intellectui competens, aut ullo modo sufficiens, adhuc quaesita est et congesta. Sed contra homines docti (supini sane et faciles) rumores quosdam experientiae, et quasi famas et auras ejus, ad philosophiam suam vel constituendam vel confirmandam exceperunt, atque illis nihilominus pondus legitimi testimonii attribuerunt. Ac veluti si regnum aliquod aut status non ex literis et relationibus a legatis et nuntiis fide dignis missis, sed ex urbanorum sermunculis et ex triviis consilia sua et negotia gubernaret; omnino talis in philosphiam administratio, quatenus ad experientiam, introducta est. Nil debitis modis exquisitum, nil verificatum, nil numeratum, nil appensum, nil dimensum in naturali historia reperitur. At quod in observatione indefinitum et vagum, id in informatione fallax et infidum est. Quod si cui haec mira dictu videantur, et querelae minus justae propiora, cum Aristoteles tantus ipse vir, et tanti regis opibus subnixus, tam accuratam de animalibus historiam confecerit, atque alii nonnulli majore diligentia (licet strepitu minore) multe adjecerint, et rursus alii de plantis, de metallis, et fossilibus, historias et narrationes copiosas conscripserint; is sane non satis attendere et perspicere videtur, quid agatur in praesentia. Alia enim est ratio naturalis historiae, quae propter se confecta est; alia ejus, quae collecta est ad informandum intellectum

in ordine ad condendam philosophiam. Atque hae duae historiae tum aliis rebus, tum praecipue in hoc differunt; quod prima ex illis specierum naturalium varietatem, non artium mechanicarum experimenta contineat. Quemadmodum enim in civilibus ingenium cujusque, et occultus animi affectuumque sensus, melius elicitur, cum quis in perturbatione ponitur, quam alias: simili modo, et occulta naturae magis se produnt per vexationes artium, quam cum cursu suo meant. Itaque tum demum bene sperandum est de naturali philosophia, postquam historia naturalis (quae ejus basis est et fundamentum) melius instructa fuerit; antea vero minime.

XCIX.

Atque rursus in ipsa experimentorum mechanicorum copia, summa eorum, quae ad intellectus informationem maxime faciunt et juvant, detegitur inopia. Mechanicus enim, de veritatis inquisitione nullo modo sollicitus, non ad alia quam quae operi suo subserviunt aut animum erigit aut manum porrigit. Tum vero de scientiarum ulteriore progressu spes bene fundabitur, quum in Historiam Naturalem recipientur et aggregabuntur complura experimenta, quae in se nullius sunt usus, se ad inventionem causarum et axiomatum tantum faciunt; quae nos lucifera experimenta, ad differentiam fructiferorum, appellare consuevimus. Illa autem miram habent in se virtutem et conditionem; hanc videlicet, quod nunquam fallant aut frustrentur. Cum enim ad hoc adhibeantur, non ut opus aliquod efficiant sed ut causam naturalem in aliquo revelent, quaquaversum cadunt, intentioni aeque satisfaciunt; cum quaestionem terminent.

C.

At non solum copia major experimentorum quaerenda est et procuranda, atque etiam alterius generis, quam adhuc factum est; sed etiam methodus plane alia et ordo et processus continuande et provehendae Experientiae introducenda. Vaga enim Experientia et se tantum sequens (ut superius dictum est) mera palpatio est,

et homines potius stupefacit quam informat. At cum Experientia lege certa procedet, seriatim et continenter, de scientiis aliquid melius sperari poterit.

CI.

Postquam vero copia et materies Historiae Naturalis et Experientiae, talis qualis ad opus intellectus sive ad opus philosophicum requiritur, praesto jam sit et parata; tamen nullo modo sufficit intellectus, ut in illam materiem agat sponte et memoriter; non magis, quam si quis computationem alicujus ephemeridis memoriter se tenere et superare posse speret. Atque hactenus tamen potiores meditationis partes quam scriptionis in inveniendo fuerunt; neque adhuc Experientia literata facta est: atqui nulla nisi de scripto inventio probanda est. Illa vero in usum inveniente, ab Experientia facta demum literata melius sperandum.

CII.

Atque insuper cum tantus sit particularium numerus et quasi exercitus, isque ita sparsus et diffusus, ut intellectum disgreget et confundat, de velitationibus et levibus motibus et transcursibus intellectus non bene sperandum est; nisi fiat instructio et coordinatio, per tabulas inveniendi idoneas et bene dispositas et tanquam vivas, eorum quae pertinent ad subjectum in quo versatur inquisitio, atque ad harum tabularum auxilia praeparata et digesta mens applicetur.

CIII.

Verum post copiam particularium rite et ordine veluti sub oculos positorum, non statim transeundum est ad inquisitionem et inventionem novorum particularium aut operum; aut saltem, si hoc fiat, in eo non acquiescendum. Neque enim negamus, postquam omnia omnium artium experimenta collecta et digesta fuerint atque ad unius hominis notitam et judicium pervenerint, quin ex ipsa traductione experimentorum unius artis in alias multa nova inveniri possint ad

humanam vitam et statum utilia, per istam Experientiam quam vocamus Literatam: sed tamen minora de ea speranda sunt; majora vero a nova luce Axiomatum ex particularibus illis certa via et regula eductorum, quae rursus nova particularia indicent et designent. Neque enim in plano via sita est, sed ascendendo et descendendo; ascendendo primo ad Axiomata, descendendo ad Opera.

CIV.

Neque tamen permittendum est, ut intellectus a particularibus ad axiomata remota et quasi generalissima (qualia sunt principia, quae vocant, artium et rerum) saliat et volet; et ad eorum immotam veritatem axiomata media probet et expediat: quod adhuc factum est, prono ad hoc impetu naturali intellectus, atque etiam ad hoc ipsum, per demonstrationes quae fiunt per syllogismum, jampridem edocto et assuefacto. Sed de scientiis tum demum bene sperandum est, quando per scalam veram, et per gradus continuos et non intermissos aut hiulcos, a particularibus ascendetur ad axiomata minora, et deinde ad media, alia aliis superiora, et postremo demum ad generalissima. Etenim axiomata infirma non multum ab experientia nuda discrepant. Suprema vero illa et generalissima (quae habentur) notionalia sunt et abstracta, et nil habent solidi. At media sunt axiomata illa vera et solida et viva, in quibus humanae res et fortunae sitae sunt; et supra haec quoque, tandem ipsa illa generalissima; talia scilicet quae non abstracta sint, sed per haec media vere limitantur.

Itaque hominum intellectui non plumae addendae, sed plumbum potius et pondera; ut cohibeant omnem saltum et volatum. Atque hoc adhuc factum non est; quum vero factum fuerit, melius de scientiis sperare licebit.

CV.

In constituendo autem axiomate, forma inductionis alia quam adhuc in usu fuit excogitanda est; eaque non ad principia tantum (quae vocant) probanda et invenienda, sed etiam ad axiomata minora et media, denique omnia. Inductio

enim quae procedit per enumerationem simplicem res puerilis est, et precario concludit, et periculo exponitur ab instantia contradictoria, et plerumque secundum pauciora quam par est, et ex his tantummodo quae praesto sunt, pronunciat. At inductio, quae ad inventionem et demonstrationem scientiarum et artium erit utilis, naturam separare debet, per rejectiones et exclusiones debitas; ac deinde, post negativas tot quot sufficiunt, super affirmativas concludere; quod adhuc factum non est, nec tentatum certe, nisi tantummodo a Platone, qui ad excutiendas definitiones et ideas hac certe forma inductionis aliquatenus utitur. Verum ad hujus inductionis, sive demonstrationis, instructionem bonam et legitimam quamplurima adhibenda sunt, quae adhuc nullius mortalium cogitationem subiere; adeo ut in ea major sit consumenda opera, quam adhuc consumpta est in syllogismo. Atque hujus inductionis auxilio, non solum ad axiomata invenienda, verum etiam ad notiones terminandas, utendum est. Atque in hac certe inductione spes maxima sita est.

CVI.

At in axiomatibus constituendis per hanc inductionem, examinatio et probatio etiam facienda est, utrum quod constituitur axioma aptatum sit tantum et ad mensuram factum eorum particularium ex quibus extrahitur; an vero sit amplius et latius. Quod si sit amplius aut latius, videndum an eam suam amplitudinem et latitudinem per novorum particularium designationem, quasi fide-jussione quadam, firmet; ne vel in jam notis tantum haereamus, vel laxiore fortasse complexu umbras et formas abstractas, non solida et determinata in materia, prensemus. Haec vero cum in usum venerint, solida tum demum spes merito affulserit.

CVII.

Atque hic etiam resumendum est, quod superius dictum est de Naturali Philosophia producta et scientiis particularibus ad eam reductis, ut non fiat

scissio et truncatio scientiarum; nam etiam absque hoc minus de progressu sperandum est.

CVIII.

Atque de desperatione tollenda et spe facienda, ex praeteriti temporis erroribus valere jussis aut rectificatis, jam dictum est. Videndum autem et si quae alia sint quae spem faciant. Illud vero occurrit; si hominibus non quaerentibus, et aliud agentibus, multa utilia, tanquam casu quodam aut per occasionem, inventa sint; nemini dubium esse posse, quin iisdem quaerentibus et hoc agentibus, idque via et ordine, non impetu et desultorie, longe plura detegi necesse sit. Licet enim semel aut iterum accidere possit, ut quispiam in id forte fortuna incidat, quod magno conatu et de industria scrutantem antea fugit; tamen in summa rerum proculdubio contrarium invenitur. Itaque longe plura et meliora, atque per minora intervalla, a ratione et industria et directione et intentione hominum speranda sunt, quam a casu et instinctu animalium et hujusmodi, quae hactenus principium inventis dederunt.

CIX.

Etiam illud ad spem trahi possit, quod nonnulla ex his quae jam inventa sunt ejus sint generis ut antequam invenirentur haud facile cuiquam in mentem venisset de iis aliquid suspicari; sed plane quis illa ut impossibilia contempsisset. Solent enim homines de rebus novis ad exemplum veterum, et secundum phantasiam ex iis praeceptam et inquinatam, hariolari; quod genus opinandi fallacissimum est, quandoquidem multa ex his quae ex fontibus rerum petuntur per rivulos consuetos non fluant.

Veluti si quis, ante tormentorum igneorum inventionem, rem per effectus descripsisset, atque in hunc modum dixisset: inventum quoddam detectum esse, per quod muri et munitiones quaeque maximae ex longo intervallo concuti et dejici possint; homines sane de viribus tormentorum et machinarum per pondera et rotas et hujusmodi arietationes et impulsus multiplicandis, multa et varia

secum cogitaturi fuissent; de vento autem igneo, tam subito et violenter se expandente et exsufflante, vix unquam aliquid alicujus imaginationi aut phantasiae occursurum fuisset; utpote cujus exemplum in proximo non vidisset, nisi forte in terrae motu aut fulmine, quae, ut magnalia naturae et non imitabilia ab homine, homines statim rejecturi fuissent.

Eodem modo si, ante fili bombycini inventionem, quispiam hujusmodi sermonem injecisset: esse quoddam fili genus inventum ad vestium et supellectilis usum, quod filum linteum aut laneum tenuitate, et nihilominus tenacitate, ac etiam splendore et mollitie, longe superaret; homines statim aut de serico aliquo vegetabili, aut de animalis alicujus pilis delicatioribus, aut de avium plumis et lanugine, aliquid opinaturi fuissent; verum de vermis pusilli textura, eaque tam copiosa et se renovante et anniversaria, nil fuissent certe commenturi. Quod si quis etiam de vermi verbum aliquod injecisset, ludibrio certe futurus fuisset, ut qui novas aranearum operas somniaret.

Similiter, si ante inventionem acus nauticae quispiam hujusmodi sermonem intulisset: inventum esse quoddam instrumentum, per quod cardines et puncta coeli exacte capi et dignosci possint; homines statim de magis exquisita fabricatione instrumentorum astronomicorum ad multa et varia, per agitationem phantasiae, discursuri fuissent; quod vero aliquid inveniri possit, cujus motus cum coelestibus tam bene conveniret, atque ipsum tamen ex coelestibus non esset, sed tantum substantia lapidea aut metallica, omnino incredibile visum fuisset. Atque haec tamen et similia per tot mundi aetates homines latuerunt, nec per philosophiam aut artes rationales inventa sunt, sed casu et per occasionem; suntque illius (ut diximus) generis, ut ab iis quae antea cognita fuerunt plane heterogenea et remotissima sint, ut praenotio aliqua nihil prorsus ad illa conducere potuisset.

Itaque sperandum omnino est, esse adhuc in naturae sinu multa excellentis usus recondita, quae nullam cum jam inventis cognationem habent aut parallelismum, sed omnino sita sunt extra vias phantasiae; quae tamen adhuc inventa non sunt; quae proculdubio per multos saeculorum circuitus et ambages

et ipsa quandoque prodibunt, sicut illa superiora prodierunt; sed per viam, quam nunc tractamus, propere et subito et simul repraesentari et anticipari possunt.

CX.

Attamen conspiciuntur et alia inventa ejus generis, quae fidem faciant, posse genus humanum nobilia inventa, etiam ante pedes posita, praeterire et transilire. Utcunque enim pulveris tormentarii vel fili bombycini vel acus nauticae vel sacchari vel papyri vel similium inventa quibusdam rerum et naturae proprietatibus niti videantur, at certe imprimendi artificium nil habet quod non sit apertum et fere obvium. Et nihilominus homines, non advertentes literarum modulos difficilius scilicet collocari quam literae per motum manus scribantur, sed hoc interesse, quod literarum moduli semel collocati infinitis impressionibus, literae autem per manum exaratae unicae tantum scriptioni, sufficiant; aut fortasse iterum non advertentes atramentum ita inspissari posse, ut tingat, non fluat; praesertim literis resupinatis et impressione facta desuper; hoc pulcherrimo invento (quod ad doctrinarum propagationem tantum facit) per tot saecula caruerunt.

Solet autem mens humana, in hoc inventionis curriculo, tam laeva saepenumero et male composita esse, ut primo diffidat, et paulo post se contemnat; atque primo incredibile ei videatur aliquid tale inveniri posse, postquam autem inventum sit, incredibile rursus videatur id homines tamdiu fugere potuisse. Atque hoc ipsum ad spem rite trahitur; superesse nimirum adhuc magnum inventorum cumulum, qui non solum ex operationibus incognitis eruendis, sed et ex jam cognitis transferendis et componendis et applicandis, per eam quam diximus Experientiam Literatam, deduci possit.

CXI.

Neque illud omittendum ad faciendam spem: reputent (si placet) homines infinitas ingenii, temporis, facultatum expensas, quas homines in rebus et studiis longe minoris usus et pretii collocant; quorum pars quota si ad sana et solida

verteretur, nulla non difficultas superari possit. Quod idcirco adjungere visum est, quia plane fatemur Historiae Naturalis et Experimentalis collectionem, qualem animo metimur et qualis esse debet, opus esse magnum, et quasi regium, et multae operae atque impensae.

CXII.

Interim particularium multitudinem nemo reformidet, quin potius hoc ipsum ad spem revocet. Sunt enim artium et naturae particularia Phaenomena manipuli instar ad ingenii commenta, postquam ab evidentia rerum disjuncta et abstracta fuerint. Atque hujus viae exitus in aperto est, et fere in propinquo; alterius exitus nullus, sed implicatio infinita. Homines enim adhuc parvam in Experientia moram fecerunt, et eam leviter perstrinxerunt, sed in meditationibus et commentationibus ingenii infinitum tempus contriverunt. Apud nos vero si esset praesto quispiam qui de facto naturae ad interrogata responderet, paucorum annorum esset inventio causarum et scientiarum omnium.

CXIII.

Etiam nonnihil hominibus spei fieri posse putamus ab exemplo nostro proprio; neque jactantiae causa hoc dicimus sed quod utile dictu sit. Si qui diffidant, me videant, hominem inter homines aetatis meae civilibus negotiis occupatissimum, nec firma admodum valetudine (quod magnum habet temporis dispendium), atque in hac re plane protopirum, et vestigia nullius sequutum, neque haec ipsa cum ullo mortalium communicantem, et tamen veram viam constanter ingressum et ingenium rebus submittentem, haec ipsa aliquatenus (ut existimamus) provexisse: et deinceps videant, quid ab hominibus otio abundantibus, atque a laboribus consociatis, atque a temporum successione, post haec indicia nostra expectandum sit; praesertim in via quae non singulis solummodo pervia est (ut fit in via illa rationali), sed ubi hominum labores et operae (praesertim quantum ad experientiae collectam) optime distribui et deinde componi possint. Tum

enim homines vires suas nosse incipient, cum non eadem infiniti, sed alia alii praestabunt.

CXIV.

Postremo, etiamsi multo infirmior et obscurior aura spei ab ista Nova Continente spiraverit, tamen omnino experiendum esse (nisi velimus animi esse plane abjecti) statuimus. Non enim res pari periculo non tentatur, et non succedit; cum in illo ingentis boni, in hoc exiguae humanae operae, jactura vertatur. Verum ex dictis, atque etiam ex non dictis, visum est nobis spei abunde subesse, non tantum homini strenuo ad experiendum, sed etiam prudenti et sobrio ad credendum.

CXV.

Atque de desperatione tollenda, quae inter causas potentissimas ad progressum scientiarum remorandum et inhibendum fuit, jam dictum est. Atque simul sermo de signis et causis errorum, et inertiae et ignorantiae quae invaluit, absolutus est; praesertim cum subtiliores causae, et quae in judicium populare aut observationem non incurrunt, ad ea quae de Idolis animi humani dicta sunt referri debeant.

Atque hic simul pars destruens Instaurationis nostrae claudi debet, quae perficitur tribus redargutionibus: redargutione nimirum Humanae Rationis Nativae et sibi permissae; redargutione Demonstrationum; et redargutione Theoriarum, sive philosophiarum et doctrinarum quae receptae sunt. Redargutio vero earum talis fuit qualis esse potuit; videlicet per signa, et evidentiam causarum; cum confutatio alia nulla a nobis (qui et de principiis et de demonstrationibus ab aliis dissentimus) adhiberi potuerit.

Quocirca tempus est, ut ad ipsam artem et normam Interpretandi Naturam veniamus; et tamen nonnihil restat quod praevertendum est. Quum enim in hoc primo Aphorismorum libro illud nobis propositum sit, ut tam ad intelligendum quam ad recipiendum ea quae sequuntur mentes hominum praeparentur;

expurgata jam et abrasa et aequata mentis area, sequitur ut mens sistatur in positione bona, et tanquam aspectu benevolo, ad ea quae proponemus. Valet enim in re nova ad praejudicium, non solum praeoccupatio fortis opinionis veteris, sed et praeceptio sive praefiguratio falsa rei quae affertur. Itaque conabimur efficere ut habeantur bonae et verae de iis quae adducimus opiniones, licet ad tempus tantummodo, et tanquam usurariae, donec res ipsa pernoscatur.

CXVI.

Primo itaque postulandum videtur, ne existiment homines nos, more antiquorum Graecorum, aut quorundam novorum hominum, Telesii, Patricii, Severini, sectam aliquam in philosophia condere velle. Neque enim hoc agimus; neque etiam multum interesse putamus ad hominum fortunas quales quis opiniones abstractas de natura et rerum principiis habeat; neque dubium est, quin multa hujusmodi et vetera revocari et nova introduci possint; quemadmodum et complura themata coeli supponi possunt, quae cum phaenomenis sat bene conveniunt, inter se tamen dissentiunt.

At nos de hujusmodi rebus opinabilibus, et simul inutilibus, non laboramus. At contra nobis constitutum est experiri, an revera potentiae et amplitudinis humanae firmiora fundamenta jacere ac fines in latius proferre possimus. Atque licet sparsim, et in aliquibus subjectis specialibus, longe veriora habeamus et certiora (ut arbitramur) atque etiam magis fructuosa quam quibus homines adhuc utuntur (quae in quintam Instaurationis nostrae partem congessimus), tamen theoriam nullam universalem aut integram proponimus. Neque enim huic rei tempus adhuc adesse videtur. Quin nec spem habemus vitae producendae ad sextam. Instaurationis partem (quae philosophiae per legitimam Naturae Interpretationem inventae destinata est) absolvendam; sed satis habemus si in mediis sobrie et utiliter nos geramus, atque interim semina veritatis sincerioris in poteros spargamus, atque initiis rerum magnarum non desimus.

CXVII.

Atque quemadmodum sectae conditores non sumus, ita nec operum particularium largitores aut promissores. Attamen possit aliquis hoc modo occurrere; quod nos, qui tam saepe operum mentionem faciamus et omnia eo trahamus, etiam operum, etiam operum aliquorum pignora exhibeamus. Verum via nostra et ratio (ut saepe perspicue diximus et adhuc dicere juvat) ea est; ut non opera ex operibus sive experimenta ex experimentis (ut empirici), sed ex operibus et experimentis causas et axiomata, atque ex causis et axiomatibus rursus nova opera et experimenta (ut legitimi Naturae Interpretes), extrahamus.

Atque licet in tabulis nostris inveniendi (ex quibus quarta pars Instaurationis consistit), atque etiam exemplis particularium (quae in secunda parte adduximus), atque insuper in observationibus nostris super historiam (quae in tertia parte operis descripta est), quivis vel mediocris perspicaciae et solertiae complurium operum nobilium indicationes et designationes ubique notabit; ingenue tamen fatemur, historiam naturalem quam adhuc habemus, aut ex libris aut ex inquisitione propria, non tam copiosam esse et verificatam, ut legitimae Interpretationi satisfacere aut ministrare possit.

Itaque si quis ad mechanica sit magis aptus et paratus, atque sagax ad venanda opera ex conversatione sola cum experimentis, ei permittimus et relinquimus illam industriam, ut ex historia nostra et tabulis multa tanquam in via decerpat et applicet ad opera, ac veluti foenus recipiat ad tempus, donec sors haberi possit. Nos vero, cum ad majora contendamus, moram omnem praeproperam et praematuram in istiusmodi rebus tanquam Atalantae pilas (ut saepius solemus dicere) damnamus. Neque enim aurea poma pueriliter affectamus, sed omnia in victoria cursus artis super naturam ponimus; neque muscum aut segetem herbidam demetere festinamus, sed messem tempestivam expectamus.

CXVIII.

Occurret etiam alicui proculdubio, postquam ipsam historiam nostram et inventionis tabulas perlegerit, aliquid in ipsis experimentis minus certum, vel

omnino falsum; atque propterea secum fortasse reputabit, fundamentis et principiis falsis et dubiis inventa nostra niti. Verum hoc nihil est; necesse enim est talia sub initiis evenire. Simile enim est ac si in scriptione aut impressione una forte litera aut altera perperam posita aut collocata sit; id enim legentem non multum impedire solet, quandoquidem errata ab ipso sensu facile corriguntur. Ita etiam cogitent homines, multa in historia naturali experimenta falso credi et recipi posse, quae paulo post a causis et axiomatibus inventis facile expunguntur et rejiciuntur. Sed tamen verum est, si in historia naturali et experimentis magna et crebra et continua fuerint errata, illa nulla ingenii aut artis foelicitate corrigi aut emendari posse. Itaque si in historia nostra naturali, quae tanta diligentia et severitate et fere religione probata et collecta est, aliquid in particularibus quandoque subsit falsitatis aut erroris, quid tandem de naturali historia vulgari, quae prae nostra tam negligens est et facilis, dicendum erit? aut de philosophia et scientiis super hujusmodi arenas (vel syrtes potius) aedificatis? Itaque hoc quod diximus neminem moveat.

CXIX.

Occurrent etiam in historia nostra et experimentis plurimae res, primo leves et vulgatae, deinde viles et illiberales, postremo nimis subtiles ac mere speculativae, et quasi nullius usus: quod genus rerum hominum studia avertere et alienare possit.

Atque de istis rebus, quae videntur vulgatae, illud homines cogitent; solere sane eos adhuc nihil aliud agere, quam ut eorum quae rara sunt causas ad ea quae frequenter fiunt referant et accommodent, at ipsorum quae frequenter eveniunt nullas causas inquirant, sed ea ipsa recipiant tanquam concessa et admissa.

Itaque non ponderis, non rotationis coelestium, non caloris, non frigoris, non luminis, non duri, non mollis, non tenuis, non densi, non liquidi, non consistentis, non animati, non inanimati, non similaris, non dissimilaris, nec demum organici, causas quaerunt; sed illis, tanquam pro evidentibus et

manifestis, receptis, de ceteris rebus, quae non tam frequenter et familiariter occurrunt, disputant et judicant.

Nos vero, qui satis scimus nullum de rebus raris aut notabilibus judicium fieri posse, multo minus res novas in lucem protrahi, absque vulgarium rerum causis et causarum causis rite examinatis et repertis, necessario ad res vulgarissimas in historiam nostram recipiendas compellimur. Quinetiam nil magis philosophiae offecisse deprehendimus quam quod res, quae familiares sunt et frequenter occurrunt, contemplationem hominum non morentur et detineant, sed recipiantur obiter, neque earum causae quaeri soleant: ut non saepius requiratur informatio de rebus ignotis, quam attentio in notis.

CXX.

Quod vero ad rerum vilitatem attinet, vel etiam turpitudinem, quibus (ut ait Plinius) honos praefandus est; eae res, non minus quam lautissimae et pretiosissimae, in historiam naturalem recipiendae sunt. Neque propterea polluitur naturalis historia: sol enim aeque palatia et cloacas ingreditur, neque tamen polluitur. Nos autem non Capitolium aliquod aut Pyramidem hominum superbiae dedicamus aut condimus, sed templum sanctum ad exemplar mundi in intellectu humano fundamus. Itaque exemplar sequimur. Nam quicquid essentia dignum est, id etiam scientia dignum, quae est essentiae imago. At vilia aeque subsistunt ac lauta. Quinetiam, ut e quibusdam putridis materiis, veluti musco et zibetho, aliquando optimi odores generantur; ita et ab instantiis vilibus et sordidis quandoque eximia lux et informatio emanat. Verum de hoc nimis multa; cum hoc genus fastidii sit plane puerile et effoeminatum.

CXXI.

At de illo omnino magis accurate dispiciendum; quod plurima in historia nostra captui vulgari, aut etiam cuivis intellectui (rebus praesentibus assuefacto), videbuntur curiosae cujusdam et inutilis subtilitatis. Itaque de hoc ante omnia et dictum et dicendum est: hoc scilicet; nos jam sub initiis et ad tempus, tantum

lucifera experimenta, non fructifera quaerere; ad exemplum creationis divinae, quod saepius diximus, quae primo die lucem tantum produxit, eique soli unum integrum diem attribuit, neque illo die quicquam materiati operis immiscuit.

Itaque si quis istiusmodi res nullius esse usus putet, idem cogitat ac si nullum etiam lucis esse usum censeat, quia res scilicet solida aut materiata non sit. Atque revera dicendum est, simplicum naturarum cognitionem bene examinatam et definitam instar lucis esse; quae ad universa operum penetralia aditum praebet, atque tota agmina operum et turmas, et axiomatum nobilissimorum fontes, potestate quadam complectitur et post se trahit; in se tamen non ita magni usus est. Quin et literarum elementa per se et separatim nihil significant nec alicujus usus sunt, sed tamen ad omnis sermonis compositionem et apparatum instar materiae primae sunt. Etiam semina rerum potestate valida, usu (nisi in processu suo) nihili sunt. Atque lucis ipsius radii dispersi, nisi coeant, beneficium suum non impertiuntur.

Quod si quis subtilitatibus speculativis offendatur, quid de scholasticis viris dicendum erit, qui subtilitatibus immensum indulserunt? quae tamen subtilitates in verbis, aut saltem vulgaribus notionibus (quod tantundem valet), non in rebus aut natura consumptae fuerunt, atque utilitatis expertes erant, non tantum in origine, sed etiam in consequentiis; tales autem non fuerunt, ut haberent in praesens utilitatem nullam, sed per consequens infinitam; quales sunt eae de quibus loquimur. Hoc vero sciant homines pro certo, omnem subtilitatem disputationum et discursuum mentis, si adhibeatur tantum post axiomata inventa, seram esse et praeposteram; et subtilitatis tempus verum ac proprium, aut saltem praecipuum, versari in pensitanda experientia et inde constituendis axiomatibus: nam illa altera subtilitas naturam prensat et captat, sed nunquam apprehendit aut capit. Et verissimum certe est quod de occasione sive fortuna dici solet, si transferatur ad naturam: videlicet, eam a fronte comatam, ab occipitio calvam esse.

Denique de contemptu in naturali historia rerum aut vulgarium, aut vilium, aut nimis subtilium et in originibus suis inutilium, illa vox mulierculae ad tumidum principem, qui petitionem ejus ut rem indignam et majestate sua

inferiorem abjecisset, pro oraculo sit; Disne ergo rex esse: quia certissimum est, imperium in naturam, si quis hujusmodi rebus ut nimis exilibus et minutis vacare nolit, nec obtineri nec geri posse.

CXXII.

Occurrit etiam et illud; mirabile quiddam esse et durum, quod nos omnes scientias atque omnes authores simul ac veluti uno ictu et impetu summoveamus: idque non assumpto aliquo ex antiquis in auxilium et praesidium nostrum, sed quasi viribus propriis.

Nos autem scimus, si minus sincera fide agere voluissemus, non difficile fuisse nobis, ista quae afferuntur vel ad antiqua saecula ante Graecorum tempora (cum scientiae de natura magis fortasse sed tamen majore cum silentio floruerint, neque in Graecorum tubas et fistulas adhuc incidissent), vel etiam (per partes certe) ad aliquos ex Graecis ipsis referre, atque astipulationem et honorem inde petere: more novorum hominum, qui nobilitatem sibi ex antiqua aliqua prosapia, per genealogiarum favores, astruunt et affingunt. Nos vero rerum evidentia freti, omnem commenti et imposturae conditionem rejicimus; neque ad id quod agitur plus interesse putamus, utrum quae jam invenientur antiquis olim cognita, et per rerum vicissitudines et saecula occidentia et orientia sint, quam hominibus curae esse debere, utrum Novus Orbis fuerit insula illa Atlantis et veteri mundo cognita, an nunc primum reperta. Rerum enim inventio a naturae luce petenda, non ab antiquitatis tenebris repetenda est.

Quod vero ad universalem istam reprehensionem attinet, certissimum est vere rem reputanti, eam et magis probabilem esse et magis modestam, quam si facta fuisset ex parte. Si enim in primis notionibus errores radicati non fuissent, fieri non potuisset quin nonnulla recte inventa alia perperam inventa correxissent. Sed cum errores fundamentales fuerint, atque ejusmodi, ut homines potius res neglexerint ac praeterierint, quam de illis pravum aut falsum judicium fecerint; minime mirum est, si homines id non obtinuerint quod non egerint, nec ad

metam pervenerint quam non posuerint aut collocarint, neque viam emensi sint quam non ingressi sint aut tenuerint.

Atque insolentiam rei quod attinet; certe si quis manus constantia atque oculi vigore lineam magis rectam aut circulum magis perfectum se describere posse quam alium quempiam sibi assumat, inducitur scilicet facultatis comparatio: quod si quis asserat se adhibita regula aut circumducto circino lineam magis rectam aut circulum magis perfectum posse describere, quam aliquem alium vi sola oculi et manus, is certe non admodum jactator fuerit. Quin hoc, quod dicimus, non solum in hoc nostro conatu primo et incoeptivo locum habet; sed etiam pertinet ad eos qui huic rei posthac incumbent. Nostra enim via inveniendi scientias exaequat fere ingenia, et non multum excellentiae eorum relinquit: cum omnia per certissimas regulas et demonstrationes transigat. Itaque haec nostra (ut saepe diximus) foelicitatis cujusdam sunt potius quam facultatis, et potius temporis partus quam ingenii. Est enim certe casus aliquis non minus in cogitationibus humanis, quam in operibus et factis.

CXXIII.

Itaque dicendum de nobis ipsis quod ille per jocum dixit, praesertim cum tam bene rem secet: fieri non potest ut idem sentiant, qui aquam et qui vinum bibant. At caeteri homines, tam veteres quam novi, liquorem biberunt crudum in scientiis, tanquam aquam vel sponte ex intellectu manantem, vel per dialecticam, tanquam per rotas ex puteo, haustam. At nos liquorem bibimus et propinamus ex infinitis confectam uvis, iisque maturis et tempestivis, et per racemos quosdam collectis ac decerptis, et subinde in torculari pressis, ac postremo in vase repurgatis et clarificatis. Itaque nil mirum si nobis cum aliis non conveniat.

CXXIV.

Occurret proculdubio et illud: nec metam aut scopum scientiarum a nobis ipsis (id quod in aliis reprehendimus) verum et optimum praefixum esse. Esse enim contemplationem veritatis omni operum utilitate et magnitudine digniorem et

celsiorem: longam vero istam et sollicitam moram in experientia et materia et rerum particularium fluctibus mentem veluti humo affigere, vel potius in Tartarum quoddam confusionis et perturbationis dejicere; atque ab abstractae sapientiae serenitate et tranquillitate (tanquam a statu multo diviniore) arcere et summovere. Nos vero huic rationi libenter assentimur; et hoc ipsum, quod innuunt ac praeoptant, praecipue atque ante omnia agimus. Etenim verum exemplar mundi in intellectu humano fundamus; quale invenitur, non quale cuipiam sua propria ratio dictaverit. Hoc autem perfici non potest, nisi facta mundi dissectione atque anatomia diligentissima. Modulos vero ineptos mundorum et tanquam simiolas, quas in philosophiis phantasiae hominum extruxerunt, omnino dissipandas edicimus. Sciant itaque homines (id quod superius diximus) quantum intersit inter humanae mentis idola et divinae mentis ideas. Illa enim nihil aliud sunt quam abstractiones ad placitum: hae autem sunt vera signacula Creatoris super creaturas, prout in materia per lineas veras et exquisitas imprimuntur et terminantur. Itaque ipsissimae res sunt (in hoc genere) veritas et utilitas: atque opera ipsa pluris facienda sunt, quatenus sunt veritatis pignora, quam propter vitae commoda.

CXXV.

Occurret fortasse et illud: nos tanquam actum agere, atque antiquos ipsos eandem quam nos viam tenuisse. Itaque verisimile putabit quispiam etiam nos, post tantum motum et molitionem, deventuros tandem ad aliquam ex illis philosophiis quae apud antiquos valuerunt. Nam et illos in meditationum suarum principiis vim et copiam magnam exemplorum et particularium paravisse, atque in commentarios per locos et titulos digessisse, atque inde philosophias suas et artes confecisse, et postea, re comperta, pronuntiasse, et exempla ad fidem et docendi lumen sparsim addidisse; sed particularium notas et codicillos ac commentarios suos in lucem edere supervacuum et molestum putasse: ideoque fecisse quod in aedificando fieri solet, nempe post aedificii structuram machinas et scalas a conspectu amovisse. Neque aliter factum esse credere certe oportet.

Verum nisi quis omnino oblitus fuerit eorum quae superius dicta sunt, huic objectioni (aut scrupulo potius) facile respondebit. Formam enim inquirendi et inveniendi apud antiquos et ipsi profitemur, et scripta eorum prae se ferunt. Ea autem non alia fuit, quam ut ab exemplis quibusdam et particularibus (additis notionibus communibus, et fortasse portione nonnulla ex opinionibus receptis, quae maxime placuerunt) ad conclusiones maxime generales sive principia scientiarum advolarent, ad quorum veritatem immotam et fixam conclusiones inferiores per media educerent ac probarent; ex quibus artem constituebant. Tum demum si nova particularia et exempla mota essent et adducta quae placitis suis refragarentur, illa aut per distinctiones aut per regularum suarum explanationes in ordinem subtiliter redigebant, aut demum per exceptiones grosso modo summovebant: at rerum particularium non refragantium causas ad illa principia sua laboriose et pertinaciter accommodabant. Verum nec historia naturalis et experientia illa erat, quam fuisse oportebat (longe certe abest), et ista advolatio ad generalissima omnia perdidit.

CXXVI.

Occurret et illud: nos, propter inhibitionem quandam pronuntiandi et principia certa ponendi donec per medios gradus ad generalissima rite perventum sit, suspensionem quandam judicii tueri, atque ad Acatalepsiam rem deducere. Nos vero non Acatalepsiam, sed Eucatalepsiam meditamur et proponimus: sensui enim non derogamus, sed ministramus; et intellectum non contemnimus, sed regimus. Atque melius est scire quantum opus sit, et tamen nos non penitus scire putare, quam penitus scire nos putare, et tamen nil eorum quae opus est scire.

CXXVII.

Etiam dubitabit quispiam potius quam objiciet, utrum nos de Naturali tantum Philosophia, an etiam de scientiis reliquis, Logicis, Ethicis, Politicis, secundum viam nostram perficiendis loquamur. At nos certe de universis haec quae dicta sunt intelligimus: atque quemadmodum vulgaris logica, quae regit res per

syllogismum, non tantum ad naturales, sed ad omnes scientias pertinet; ita et nostra, quae procedit per inductionem, omnia complectitur. Tam enim historiam et tabulas inveniendi conficimus de ira, metu, et verecundia, et similibus; ac etiam de exemplis rerum civilium: nec minus de motibus mentalibus memoriae, compositionis et divisionis, judicii, et reliquorum, quam de calido et frigido, aut luce, aut vegetatione, aut similibus. Sed tamen cum nostra ratio interpretandi, post historiam praeparatam et ordinatam, non mentis tantum motus et discursus (ut logica vulgaris), sed et rerum naturam intueatur; ita mentem regimus, ut ad rerum naturam se, aptis per omnia modis, applicare possit. Atque propterea multa et diversa in doctrina interpretationis praecipimus, quae ad subjecti, de quo inquirimus, qualitatem et conditionem, modum inveniendi nonnulla ex parte applicent.

CXXVIII.

At illud de nobis ne dubitare quidem fas sit; utrum nos philosophiam et artes et scientias quibus utimur destruere et demoliri cupiamus: contra enim, earum et usum et cultum et honores libenter amplectimur. Neque enim ullo modo officimus, quin istae, quae invaluerunt, et disputationes alant, et sermones ornent, et ad professoria munera ac vitae civilis compendia adhibeantur et valeant; denique, tanquam numismata quaedam, consensu inter homines recipiantur. Quinetiam significamus aperte, ea quae nos adducimus ad istas res non multum idonea futura; cum ad vulgi captum deduci omnino non possint, nisi per effecta et opera tantum. At hoc ipsum, quod de affectu nostro et bona voluntate erga scientias receptas dicimus, quam vere profiteamur, scripta nostra in publicum edita (praesertim libri De Progressu Scientiarum) fidem faciant. Itaque id verbis amplius vincere non conabimur. Illud interim constanter et diserte monemus; his modis, qui in usu sunt, nec magnos in scientiarum doctrinis et contemplatione progressus fieri, nec illas ad amplitudinem operum deduci posse.

CXXIX.

Superest ut de Finis excellentia pauca dicamus. Ea si prius dicta fuissent, votis similia videri potuissent: sed spe jam facta, et iniquis praejudiciis sublatis, plus fortasse ponderis habebunt. Quod si nos omnia perfecissemus et plane absolvissemus, nec alios in partem et consortium laborum subinde vocaremus, etiam ab hujusmodi verbis abstinuissemus, ne acciperentur in praedicationem meriti nostri. Cum vero aliorum industria acuenda sit et animi excitandi atque accendendi, consentaneum est ut quaedam hominibus in mentem redigamus.

Primo itaque, videtur inventorum nobilium introductio inter actiones humanas longe primas partes tenere: id quod antiqua saecula judicaverunt. Ea enim rerum inventoribus divinos honores tribuerunt; iis autem qui in rebus civilibus merebantur (quales erant urbium et imperiorum conditores, legislatores, patriarum a diuturnis malis liberatores, tyrannidum debellatores, et his similes), heroum tantum honores decreverunt. Atque certe si quis ea recte conferat, justum hoc prisci saeculi judicium reperiet. Etenim inventorum beneficia ad universum genus humanum pertinere possunt, civilia ad certas tantummodo hominum sedes: haec etiam non ultra paucas aetates durant, illa quasi perpetuis temporibus. Atque status emendatio in civilibus non sine vi et perturbatione plerumque procedit: at inventa beant, et beneficium deferunt absque alicujus injuria aut tristitia.

Etiam inventa quasi novae creationes sunt, et divinorum operum imitamenta; ut bene cecinit ille:

‘Primum frugiferos foetus mortalibus aegris
Dididerant quondam praestanti nomine Athenae;
Et RECREAVERUNT vitam, legesque rogarunt.’

Atque videtur notatu dignum in Solomone; quod cum imperio, auro, magnificentia operum, satellitio, famulitio, classe insuper, et nominis claritate, ac summa hominum admiratione floreret, tamen nihil horum delegerit sibi ad

gloriam sed ita pronuntiaverit: Gloriam Dei esse, celare rem; gloriam regis, investigare rem.

Rursus (si placet) reputet quipiam, quantum intersit inter hominum vitam in excultissima quapiam Europae provincia, et in regione aliqua Novae Indiae maxime fera et barbara: ea tantum differre existimabit, ut merito hominem homini Deum esse, non solum propter auxilium et beneficium, sed etiam per status comparationem, recte dici possit. Atque hoc non solum, non coelum, non corpora, sed artes praestant.

Rursus, vim et virtutem et consequentias rerum inventarum notare juvat; quae non in aliis manifestius occurrunt, quam in illis tribus quae antiquis incognitae, et quarum primordia, licet recentia, obscura et ingloria sunt: Artis nimirum Imprimendi, Pulveris Tormentarii, et Acus Nauticae. Haec enim tria rerum faciem et statum in orbe terrarum mutaverunt: primum, in re literaria; secundum, in re bellica; tertium, in navigationibus: unde innumerae rerum mutationes sequutae sunt; ut non imperium aliquod, non secta, non stella, majorem efficaciam et quasi influxum super res humanas exercuisse videatur, quam ista mechanica exercuerunt.

Praeterea non abs re fuerit, tria hominum ambitionis genera et quasi gradus distinguere. Primum eorum, qui propriam potentiam in patria sua amplificare cupiunt; quod genus vulgare est et degener. Secundum eorum, qui patriae potentiam et imperium inter humanum genus amplificare nituntur; illud plus certe habet dignitatis, cupiditatis haud minus. Quod si quis humani generis ipsius potentiam et imperium in rerum universitatem instaurare et amplificare conetur, ea proculdubio ambitio (si modo ita vocanda sit) reliquis et sanior est et augustior. Hominis autem imperium in res, in solis artibus et scientiis ponitur. Naturae enim non imperatur, nisi parendo.

Praeterea, si unius alicujus particularis inventi utilitas ita homines affecerit, ut eum qui genus humanum universum beneficio aliquo devincire potuerit homine majorem putaverint; quanto celsius videbitur tale aliquid invenire, per quod alia omnia expedite inveniri possint? Et tamen (ut verum omnino dicamus) quemadmodum luci magnam habemus gratiam, quod per eam vias inire, artes

exercere, legere, nos invicem dignoscere possimus; et nihilominus ipsa visio lucis res praestantior est et pulchrior, quam multiplex ejus usus: ita certe ipsa contemplatio rerum prout sunt, sine superstitione aut impostura, errore aut confusione, in seipsa magis digna est, quam universus inventorum fructus.

Postremo, siquis depravationem scientiarum et artium ad malitiam et luxuriam et similia objecerit; id neminem moveat. Illud enim de omnibus mundanis bonis dici potest, ingenio, fortitudine, viribus, forma, divitiis, luce ipsa, et reliquis. Recuperet modo genus humanum jus suum in naturam quod ei ex dotatione divina competit, et detur ei copia: usum vero recta ratio et sana religio gubernabit.

CXXX.

Jam vero tempus est ut artem ipsam Interpretandi Naturam proponamus: in qua licet nos utilissima et verissima praecepisse arbitremur, tamen necessitatem ei absolutam (ac si absque ea nil agi possit) aut etiam perfectionem non attribuimus. Etenim in ea opinione sumus: si justam Naturae et Experientiae Historiam praesto haberent homines, atque in ea sedulo versarentur, sibique duas res imperare possent; unam, ut receptas opiniones et notiones deponerent; alteram, ut mentem a generalissimis et proximis ab illis ad tempus cohiberent; fore ut etiam vi propria et genuina mentis, absque alia arte, in formam nostram Interpretandi incidere possent. Est enim Interpretatio verum et naturale opus mentis, demptis iis quae obstant: sed tamen omnia certe per nostra praecepta erunt magis in procinctu, et multo firmiora.

Neque tamen illis nihil addi posse affirmamus: sed contra, nos, qui mentem respicimus non tantum in facultate propria, sed quatenus copulatur cum rebus, Artem inveniendi cum Inventis adolescere posse, statuere debemus.

LIBER SECUNDUS

APHORISMORUM

DE INTERPRETATIONE

NATURAE

SIVE

DE REGNO

HOMINIS.

APHORISMUS.

I.

Super datum corpus novam naturam sive novas naturas generare et superinducere, opus et intentio est humanae potentiae. Datae autem naturae Formam, sive differentiam veram, sive naturam naturantem, sive fontem emanationis (ista enim vocabula habemus, quae ad indicationem rei proxime accedunt) invenire, opus et intentio est humanae scientiae. Atque his operibus primariis subordinantur alia opera duo secundaria et inferioris notae; priori, transformatio corporum concretorum de alio in aliud, intra terminos Possibilis; posteriori, inventio in omni generatione et motu latentis processus, continuati ab efficiente manifesto et materia manifesta usque ad Formam inditam; et inventio similiter latentis schematismi corporum quiescentium et non in motu.

II.

Quam infeliciter se habeat scientia humana, quae in usu est, etiam ex illis liquet quae vulgo asseruntur. Recte ponitur; Vere scire, esse per causas scire. Etiam

non male constituuntur causae quatuor; Materia, Forma, Efficiens, et Finis. At ex his causa finalis tantum abest ut prosit, ut etiam scientias corrumpat, nisi in hominis actionibus. Formae inventio habetur pro desperata. Efficiens vero, et materia (quales quaeruntur et recipiuntur, remotae scilicet, absque latenti processu ad formam) res perfunctoriae sunt, et superficiales, et nihili fere ad scientiam veram et activam. Neque tamen obliti sumus nos superius notasse et correxisse errorem mentis humanae, in deferendo formis primas essentiae. Licet enim in natura nihil vere existat praeter corpora individua, edentia actus puros individuos ex lege; in doctrinis tamen, illa ipsa lex, ejusque inquisitio et inventio atque explicatio, pro fundamento est tam ad sciendum, quam ad operandum. Eam autem legem, ejusque paragraphos, formarum nomine intelligimus; praesertim cum hoc vocabulum invaluerit, et familiariter occurrat.

III.

Qui causam alicujus naturae (veluti albedinis aut caloris) in certis tantum subjectis novit; ejus scientia imperfecta est: et qui effectum super certas tantum materias (inter eas, quae sunt susceptibiles) inducere potest; ejus potentia pariter imperfecta est. At qui efficientem et materialem causam tantummodo novit (quae causae fluxae sunt, et nihil aliud quam vehicula et causae formam deferentes in aliquibus), is ad nova inventa, in materia aliquatenus simili et praeparata, pervenire potest; sed rerum terminos altius fixos non movet. At qui formas novit, is naturae unitatem in materiis dissimillimis complectitur; itaque quae adhuc facta non sunt, qualia nec naturae vicissitudines, neque experimentales industriae, neque casus ipse, in actum unquam perduxissent, neque cogitationem humanam subitura fuissent, detegere et producere potest. Quare ex formarum inventione sequitur contemplatio vera, et operatio libera.

IV.

Licet viae ad potentiam atque ad scientiam humanam conjunctissimae sint et fere eaedem, tamen propter perniciosam et inveteratam consuetudinem versandi in

abstractis, tutius omnino est ordiri et excitare scientias ab iis fundamentis quae in ordine sunt ad partem activam, atque ut illa ipsa partem contemplativam signet et determinet. Videndum itaque est, ad aliquam naturam super corpus datum generandam et superinducendam, quale quis praeceptum aut qualem quis directionem aut deductionem maxime optaret; idque sermone simplici et minime abstruso.

Exempli gratia; si quis argento cupiat superinducere flavum colorem auri aut augmentum ponderis (servatis legibus materiae), aut lapidi alicui non diaphano diaphaneitatem, aut vitro tenacitatem, aut corpori alicui non vegetabili vegetationem; videndum (inquam) est, quale quis praeceptum aut deductionem potissimum sibi dari exoptet. Atque primo, exoptabit aliquis proculdubio sibi monstrari aliquid hujusmodi, quod opere non frustret neque experimento fallat. Secundo, exoptabit quis aliquid sibi praescribi, quod ipsum non astringat et coerceat ad media quaedam et modos quosdam operandi particulares. Fortasse enim destituetur, nec habebit facultatem et commoditatem talia media comparandi et procurandi. Quod si sint et alia media et alii modi (praeter illud praeceptum) progignendae talis naturae, ea fortasse ex iis erunt quae sunt in operantis potestate; a quibus nihilominus per angustias praecepti excludetur, nec fructum capiet. Tertio, optabit aliquid sibi monstrari, quod non sit aeque difficile ac illa ipsa operatio de qua inquiritur, sed propius accedat ad praxin.

Itaque de praecepto vero et perfecto operandi, pronuntiatum erit tale; ut sit certum, liberum, et disponens sive in ordine ad actionem. Atque hoc ipsum idem est cum inventione formae verae. Etenim forma naturae alicujus talis est ut, ea posita, natura data infallibiliter sequatur. Itaque adest perpetuo, quando natura illa adest, atque eam universaliter affirmat, atque inest omni. Eadem forma talis est ut, ea amota, natura data infallibiliter fugiat. Itaque abest perpetuo, quando natura illa abest, eamque perpetuo abnegat, atque inest soli. Postremo, forma vera talis est, ut naturam datam ex fonte aliquo essentiae deducat quae inest pluribus, et notior est naturae (ut loquuntur) quam ipsa forma. Itaque de axiomate vero et perfecto sciendi pronuntiatum et praeceptum tale est; ut inveniatur natura alia, quae sit cum natura data convertibilis, et tamen sit

limitatio naturae notioris, instar generis veri. Ista autem duo pronuntiata, activum et contemplativum, res eadem sunt; et quod in operando utilissimum, id in sciendo verissimum.

V.

At praeceptum sive axioma de transformatione corporum duplicis est generis. Primum intuetur corpus, ut turmam sive conjugationem naturarum simplicium: ut in auro haec conveniunt; quod sit flavum; quod sit ponderosum, ad pondus tale; quod sit malleabile aut ductile, ad extensionem talem; quod non fiat volatile, nec deperdat de quanto suo per ignem; quod fluat fluore tali; quod separetur et solvatur modis talibus; et similiter de caeteris naturis, quae in auro concurrunt. Itaque hujusmodi axioma rem deducit ex formis naturarum simplicium. Nam qui formas et modos novit superinducendi flavi, ponderis, ductilis, fixi, fluoris, solutionum, et sic de reliquis, et eorum graduationes et modos, videbit et curabit ut ista conjungi possint in aliquo corpore, unde sequatur transformatio in aurum. Atque hoc genus operandi pertinet ad actionem primariam. Eadem enim est ratio generandi naturam unam aliquam simplicem, et plures; nisi quod arctetur magis restringatur homo in operando, si plures requirantur, propter difficultatem tot naturas coadunandi; quae non facile conveniunt, nisi per vias naturae tritas et ordinarias. Utcunque tamen dicendum est, quod iste modus operandi (qui naturas intuetur simplices, licet in corpore concreto) procedat ex iis, quae in natura sunt constantia et aeterna et catholica, et latas praebeat potentiae humanae vias, quales (ut nunc sunt res) cogitatio humana vix capere aut repraesentare possit.

At secundum genus axiomatis (quod a latentis processus inventione pendet) non per naturas simplices procedit, sed per concreta corpora, quemadmodum in natura inveniuntur, cursu ordinario. Exempli gratia; in casu ubi fit inquisitio, ex quibus initiis, et quo modo, et quo processu, aurum aut aliud quodvis metallum aut lapis generetur, a primis menstruis aut rudimentis suis usque ad mineram perfectam; aut similiter, quo processu herbae generentur, a primis concretionibus succorum in terra, aut a seminibus, usque ad plantam formatam, cum universa

illa successione motus, et diversis et continuatis naturae nixibus; similiter, de generatione ordinatim explicata animalium, ab initu ad partum; et similiter de corporibus aliis.

Enimvero neque ad generationes corporum tantum spectat haec inquisitio, sed etiam ad alios motus et opificia naturae. Exempli gratia; in casu ubi fit inquisitio de universa serie et continuatis actionibus alimentandi, a prima receptione alimenti ad assimilationem perfectam; aut similiter de motu voluntario in animalibus, a prima impressione imaginationis et continuatis nixibus spiritus usque ad flexiones et motus artuum; aut de explicato motu linguae et labiorum et instrumentorum reliquorum usque ad editionem vocum articulatarum. Nam haec quoque spectant ad naturas concretas, sive collegiatas et in fabrica; et intuentur veluti consuetudines naturae particulares et speciales, non leges fundamentales et communes, quae constituunt formas. Veruntamen omnino fatendum est, rationem istam videri expeditiorem et magis sitam in propinquo, et spem injicere magis, quam illam primariam.

At pars Operativa similiter, quae huic parti Contemplativae respondet, operationem extendit et promovet ab iis quae ordinario in natura inveniuntur ad quaedam proxima, aut a proximis non admodum remota; sed altiores et radicales operationes super naturam pendent utique ab axiomatibus primariis. Quinetiam ubi non datur homini facultas operandi, sed tantum sciendi, ut in coelestibus (neque enim ceditur homini operari in coelestia, aut ea immutare aut transformare), tamen inquisitio facti ipsius sive veritatis rei, non minus quam cognitio causarum et consensuum, ad primaria illa et catholica axiomata de naturis simplicibus (veluti de natura rotationis spontaneae, attractionis sive virtutis magneticae, et aliorum complurium quae magis communia sunt quam ipsa coelestia) refertur. Neque enim speret aliquis terminare quaestionem, utrum in motu diurno revera terra aut coelum rotet, nisi naturam rotationis spontaneae prius comprehenderit.

VI.

Latens autem Processus, de quo loquimur, longe alia res est quam animis

Latens autem Processus, de quo loquimur, longe alia res est quam animis hominum (qualiter nunc obsidentur) facile possit occurrere. Neque enim intelligimus mensuras quasdam, aut signa, aut scalas processus in corporibus spectabiles; sed plane processum continuatum, qui maxima ex parte sensum fugit.

Exempli gratia; in omni generatione et transformatione corporum, inquirendum quid deperdatur et evolet, quid maneat, quid accedat; quid dilatetur, quid contrahatur; quid uniatur, quid separetur; quid continuetur, quid abscindatur; quid impellat, quid impediat; quid dominetur, quid succumbat; et alia complura. Neque hic rursus, haec tantum in generatione aut transformatione corporum quaerenda sunt; sed et in omnibus aliis alterationibus et motibus similiter inquirendum quid antecedat, quid succedat; quid sit incitatius, quid remissius; quid motum praebeat, quid regat; et hujusmodi. Ista vero omnia scientiis (quae nunc pinguissima Minerva et prorsus inhabili contexuntur) incognita sunt et intacta. Cum enim omnis actio naturalis per minima transigatur, aut saltem per illa quae sunt minora quam ut sensum feriant, nemo se naturam regere aut vertere posse speret, nisi illa debito modo comprehenderit et notaverit.

VII.

Similiter, inquisitio et inventio latentis schematismi in corporibus res nova est, non minus quam inventio latentis processus et formae. Versamur enim plane adhuc in atriis naturae, neque ad interiora paramus aditum. At nemo corpus datum nova natura dotare vel in novum corpus foeliciter et apposite transmutare potest, nisi corporis alterandi aut transformandi bonam habuerit notitiam. In modos enim vanos incurret, aut saltem difficiles et perversos, nec pro corporis natura in quod operatur. Itaque ad hoc etiam via plane est aperienda et munienda.

Atque in anatomia corporum organicorum (qualia sunt hominis et animalium) opera sane recte et utiliter insumitur, et videtur res subtilis et scrutinium naturae bonum. At hoc genus anatomiae spectabile est, et sensui subjectum, et in corporibus tantum organicis locum habet. Verum hoc ipsum obvium quiddam

est, et in promptu situm, prae anatomia vera schematismi latentis in corporibus quae habentur pro similaribus: praesertim in rebus specificatis et earum partibus, ut ferri, lapidis; et partibus similaribus plantae, animalis, veluti radicis, folii, floris, carnis, sanguinis, ossis, *etc.* At etiam in hoc genere non prorsus cessavit industria humana; hoc ipsum enim innuit separatio corporum similarium per distillationes et alios solutionum modos, ut dissimilaritas compositi per congregationem partium homogenearum appareat. Quod etiam ex usu est, et facit ad id quod quaerimus; licet saepius res fallax sit; quia complures naturae separationi imputantur et attribuuntur, ac si prius substitissent in composito, quas revera ignis et calor et alii modi apertionum de novo indunt et superinducunt. Sed et haec quoque parva pars est operis, ad inveniendum schematismum verum in composito; qui schematismus res est longe subtilior et accuratior, et ab operibus ignis potius confunditur quam eruitur et elucescit.

Itaque facienda est corporum separatio et solutio; non per ignem certe, sed per rationem et inductionem veram, cum experimentis auxiliaribus; et per comparationem ad alia corpora, et reductionem ad naturas simplices et earum formas, quae in composito conveniunt et complicantur; et transeundum plane a Vulcano ad Minervam, si in animo sit veras corporum texturas et schematismos (unde omnis occulta atque, ut vocant, specifica proprietas et virtus in rebus pendet; unde etiam omnis potentis alterationis et transformationis norma educitur) in lucem protrahere.

Exempli gratia; inquirendum, quid sit in omni corpore spiritus, quid essentiae tangibilis; atque ille ipse spiritus, utrum sit copiosus et turgeat, an jejunus et paucus; tenuis, aut crassior; magis aereus, aut igneus; acris, aut deses; exilis, aut robustus; in progressu, aut in regressu; abscissus, aut continuatus; consentiens cum externis et ambientibus, aut dissentiens; *etc.* Et similiter, essentia tangibilis (quae non pauciores recipit differentias, quam spiritus) atque ejus villi, et fibrae, et omnimoda textura; rursus autem collocatio spiritus per corpoream molem, ejusque pori, meatus, venae, et cellulae, et rudimenta, sive tentamenta corporis organici, sub eandem inquisitionem cadunt. Sed et in his quoque, atque adeo in

omni latentis schematismi inventione, lux vera et clara ab axiomatibus primariis immittitur, quae certe caliginem omnem et subtilitatem discutit.

VIII.

Neque propterea res deducetur ad atomum, quae praesupponit vacuum et materiam non fluxam (quorum utrumque falsum est) sed ad particulas veras, quales inveniuntur. Neque rursus est, quod exhorreat quispiam istam subtilitatem, ut inexplicabilem; sed contra, quo magis vergit inquisitio ad naturas simplices, eo magis omnia erunt sita in plano et perspicuo; translato negotio a multiplici in simplex, et ab incommensurabili ad commensurabile, et a surdo ad computabile, et ab infinito et vago ad definitum et certum; ut fit in elementis literarum, et tonis concentuum. Optime autem cedit inquisitio naturalis, quando physicum terminatur in mathematico. At rursus multitudinem aut fractiones nemo reformidet. In rebus enim, quae per numeros transiguntur, tam facile quis posuerit aut cogitaverit millenarium, quam unum; aut millesimam partem unius, quam unum integrum.

IX.

Ex duobus generibus axiomatum, quae superius posita sunt, oritur vera divisio philosophiae et scientiarum; translatis vocabulis receptis (quae ad indicationem rei proxime accedunt) ad sensum nostrum. Videlicet, ut inquisitio formarum, quae sunt (ratione certe, et sua lege) aeternae et immobiles, constituat metaphysicam; inquisitio vero efficientis, et materiae, et latentis processus, et latentis schematismi (quae omnia cursum naturae communem et ordinarium, non leges fundamentales et aeternas respiciunt) constituat physicam: atque his subordinentur similiter practicae duae; physicae mechanica; metaphysicae (perpurgato nomine) magia, propter latas ejus vias et majus imperium in naturam.

X.

Posito itaque doctrinae scopo, pergendum ad praecepta; idque ordine minime perverso aut perturbato. Atque indicia de interpretatione naturae complectuntur partes in genere duas; primam, de educendis aut excitandis axiomatibus ab experientia; secundam, de deducendis aut derivandis experimentis novis ab axiomatibus. Prior autem trifariam dividitur: in tres nempe ministrationes; ministrationem ad sensum, ministrationem ad memoriam, et ministrationem ad mentem sive rationem.

Primo enim paranda est historia naturalis et experimentalis, sufficiens et bona; quod fundamentum rei est: neque enim fingendum, aut excogitandum, sed inveniendum, quid natura faciat aut ferat.

Historia vero naturalis et experimentalis tam varia est et sparsa, ut intellectum confundat et disgreget, nisi sistatur et compareat ordine idoneo. Itaque formandae sunt tabulae et coordinationes instantiarum, tali modo et instructione ut in eas agere possit intellectus.

Id quoque licet fiat, tamen intellectus sibi permissus, et sponte movens, incompetens est et inhabilis ad opificium axiomatum, nisi regatur et muniatur. Itaque tertio, adhibenda est inductio legitima et vera, quae ipsa clavis est interpretationis. Incipiendum autem est a fine, et retro pergendum ad reliqua.

XI.

Inquisitio formarum sic procedit; super naturam datam primo facienda est comparentia ad intellectum omnium instantiarum notarum, quae in eadem natura conveniunt, per materias licet dissimillimas. Atque hujusmodi collectio facienda est historice, absque contemplatione praefestina, aut subtilitate aliqua majore. Exempli gratia; in inquisitione de forma calidi.

Instantiae convenientes in natura calidi.

1. Radii solis, praesertim aestate et meridie.
2. Radii solis, reflexi et constipati, ut inter montes, aut per parientes, et maxime omnium in speculis comburentibus.

3. Meteora ignita.
4. Fulmina comburentia.
5. Eructationes flammarum ex cavis montium, *etc.*
6. Flamma omnis.
7. Ignita solida.
8. Balnea calida naturalia.
9. Liquida ferventia, aut calefacta.
10. Vapores et fumi ferventes, atque aer ipse, qui fortissimum et furentem suscipit calorem, si concludatur; ut in reverberatoriis.
11. Tempestates aliquae sudae per ipsam constitutionem aeris, non habita ratione temporis anni.
12. Aer conclusus et subterraneus in cavernis nonnullis, praesertim hyeme.
13. Omnia villosa, ut lana, pelles animalium, et plumagines, habent nonnihil teporis.
14. Corpora omnia, tam solida, quam liquida, et tam densa, quam tenuia (qualis est ipse aer), igni ad tempus approximata.
15. Scintillae ex silice et chalybe per fortem percussionem.
16. Omne corpus fortiter attritum, ut lapis, lignum, pannus, etc.; adeo ut temones et axes rotarum aliquando flammam concipiant: et mos excitandi ignis apud Indos occidentales fuerit per attritionem.
17. Herbae virides et humidae simul conclusae et contrusae, ut rosae, pisae in corbibus; adeo ut foenum, si repositum fuerit madidum, saepe concipiat flammam.
18. Calx viva, aqua aspersa.
19. Ferrum, cum primo dissolvitur per aquas fortes in vitro, idque absque ulla admotione ad ignem: et stannum similiter, *etc.* sed non adeo intense.
20. Animalia, praesertim et perpetuo per interiora; licet in insectis calor ob parvitatem corporis non deprehendatur ad tactum.
21. Fimus equinus, et hujusmodi excrementa animalium recentia.
22. Oleum forte sulphuris et vitrioli exequitur opera caloris, in linteo adurendo.
23. Oleum origani, et hujusmodi, exequitur opera caloris in adurendis ossibus

dentium.
24. Spiritus vini fortis et bene rectificatus exequitur opera caloris; adeo ut si albumen ovi in eum injiciatur, concrescat et albescat, fere in modum albuminis cocti; panis injectus torrefiat et incrustetur, ad modum panis tosti.
25. Aromata, et herbae calidae, ut dracunculus, nasturtium vetus, *etc.* licet ad manum non sint calida (nec integra, nec pulveres eorum), tamen ad linguam et palatum parum masticata percipiuntur calida, et quasi adurentia.
26. Acetum forte, et omnia acida, in membro ubi non sit epidermis, ut in oculo, lingua, aut aliqua alia parte vulnerata, et cute detecta, dolorem cient, non multum discrepantem ab eo, qui inducitur a calido.
27. Etiam frigora acria et intensa inducunt sensum quendam ustionis;

Nam Boreae penetrabile frigus adurit.

28. Alia.
Hanc tabulam essentiae et praesentiae appellare consuevimus.

XII.

Secundo, facienda est comparentia ad intellectum instantiarum, quae natura data privantur: quia forma (ut dictum est) non minus abesse debet, ubi natura data abest, quam adesse, ubi adest. Hoc vero infinitum esset in omnibus.
Itaque subjungenda sunt negativa affirmativis, et privationes inspiciendae tantum in illis subjectis quae sunt maxime cognata illis alteris, in quibus natura data inest et comparet. Hanc tabulam declinationis, sive absentiae in proximo, appellare consuevimus

Instantiae in proximo, quae privantur natura Calidi.

Ad Instantiam primam affirmativam, Instantia prima negativa vel subjunctiva.

1. Lunae et stellarum et cometarum radii non inveniuntur calidi ad tactum: quinetiam observari solent acerrima frigora in pleniluniis. At stellae fixae

majores, quando sol eas subit aut iis approximatur, existimantur fervores solis augere et intendere; ut fit cum sol sistitur in Leone, et diebus canicularibus.

Ad 2am 2a.

2. Radii solis in media (quam vocant) regione aeris non calefaciunt; cujus ratio vulgo non male redditur; quia regio illa nec satis appropinquat ad corpus solis, unde radii emanant, nec etiam ad terram, unde reflectuntur. Atque hoc liquet ex fastigiis montium (nisi sint praealti), ubi nives perpetuo durant. Sed contra notatum est a nonnullis, quod in cacumine Picus de Tenariph, atque etiam in Andis Peruviae, ipsa fastigia montium nive destituta sint; nivibus jacentibus tantum inferius in ascensu. Atque insuper aer illis ipsis verticibus montium deprehenditur minime frigidus, sed tenuis tantum et acer; adeo ut in Andis pungat et vulneret oculos per nimiam acrimoniam, atque etiam pungat os ventriculi, et inducat vomitum. Atque ab antiquis notatum est, in vertice Olympi tantam fuisse aeris tenuitatem, ut necesse fuerit illis qui eo ascenderant secum deferre spongias aceto et aqua madefactas, easque ad os et nares subinde apponere, quia aer ob tenuitatem non sufficiebat respirationi: in quo vertice etiam relatum est, tantam fuisse serenitatem et tranquillitatem a pluviis et nivibus et ventis, ut sacrificantibus literae descriptae digito in cineribus sacrificiorum super aram Jovis, manerent in annum proximum absque ulla perturbatione. Atque etiam hodie ascendentes ad verticem Picus de Tenariph eo vadunt noctu et non interdiu; et paulo post ortum solis monentur et excitantur a ducibus suis ut festinent descendere, propter periculum (ut videtur) a tenuitate aeris, ne solvat spiritus et suffocet.

Ad 2am 3a.

Reflexio radiorum solis, in regionibus prope circulos polares, admodum debilis et inefficax invenitur in calore: adeo ut Belgae, qui hybernarunt in Nova Zembla, cum expectarent navis suae liberationem et deobstructionem a glaciali mole (quae eam obsederat) per initia mensis Julii spe sua frustrati sint, et coacti scaphae se committere. Itaque radii solis directi videntur parum posse, etiam super terram planam; nec reflexi etiam, nisi multiplicentur et uniantur, quod fit cum sol magis vergit ad perpendiculum, quia tum incidentia radiorum facit

angulos acutiores, ut lineae radiorum sint magis in propinquo: ubi contra in magnis obliquitatibus solis anguli sint valde obtusi, et proinde lineae radiorum magis distantes. Sed interim notandum est, multas esse posse operationes radiorum solis, atque etiam ex natura calidi, quae non sunt proportionatae ad tactum nostrum: adeo ut respectu nostri non operentur usque ad calefactionem, sed respectu aliorum nonnullorum corporum exequantur opera calidi.

Ad 2am 4a.

Fiat hujusmodi experimentum. Accipiatur speculum fabricatum contra ac fit in speculis comburentibus, et interponatur inter manum et radios solis; et fiat observatio, utrum minuat calorem solis, quemadmodum speculum comburens eundem auget et intendit. Manifestum est enim, quoad radios opticos, prout fabricatur speculum in densitate inaequali respectu medii et laterum, ita apparere simulachra magis diffusa aut magis contracta. Itaque idem videndum in calore.

Ad 2am 5a.

Fiat experimentum diligenter, utrum per specula comburentia fortissima et optime fabricata radii lunae possint excipi et colligi in aliquem vel minimum gradum teporis. Is vero gradus teporis si fortasse nimis subtilis et debilis fuerit, ut ad tactum percipi et deprehendi non possit, confugiendum erit ad vitra illa quae indicant constitutionem aeris calidam aut frigidam; ita ut radii lunae per speculum comburens incidant et jaciantur in summitatem vitri hujusmodi; atque tum notetur, si fiat depressio aquae per teporem.

Ad 2am 6a.

Practicetur etiam vitrum comburens super calidum, quod non sit radiosum aut luminosum; ut ferri et lapidis calefacti sed non igniti, aut aquae ferventis, aut similium; et notetur utrum fiat augmentum et intentio calidi, ut in radiis solis.

Ad 2am 7a.

Practicetur etiam speculum comburens in flamma communi.

Ad 3am 8a.

Cometarum (si et illos numerare inter meteora libuerit) non deprehenditur constans aut manifestus effectus in augendis ardoribus anni, licet siccitates saepius inde sequi notatae sint. Quinetiam trabes et columnae lucidae et

chasmata et similia apparent saepius temporibus hybernis quam aestivis; et maxime per intensissima frigora, sed conjuncta cum siccitatibus. Fulmina tamen et coruscationes et tonitrua raro eveniunt hyeme, sed sub tempus magnorum fervorum. At stellae (quas vocant) cadentes existimantur vulgo magis constare ex viscosa aliqua materia splendida et accensa, quam esse naturae igneae fortioris. Sed de hoc inquiratur ulterius.

Ad 4am 9a.

Sunt quaedam coruscationes quae praebent lumen sed non urunt; eae vero semper fiunt sine tonitru.

Ad 5am 10a.

Eructationes et eruptiones flammarum inveniuntur non minus in regionibus frigidis quam calidis; ut in Islandia et Groenlandia: quemadmodum et arbores per regiones frigidas magis sunt quandoque inflammabiles et magis piceae ac resinosae quam per regiones calidas; ut fit in abiete, pinu, et reliquis: verum in quali situ et natura soli hujusmodi eruptiones fieri soleant, ut possimus affirmativae subjungere negativam, non satis quaesitum est.

Ad 6am 11a.

Omnis flamma perpetuo est calida magis aut minus, neque omnino subjungitur negativa: et tamen referunt ignem fatuum (quem vocant), qui etiam aliquando impingitur in parietem, non multum habere caloris; fortasse instar flammae spiritus vini, quae clemens et lenis est. Sed adhuc lenior videtur ea flamma quae in nonnullis historiis fidis et gravibus invenitur apparuisse circa capita et comas puerorum et virginum; quae nullo modo comas adurebat, sed molliter circum eas trepidabat. Atque certissimum est, circa equum in itinere sudantem noctu et suda tempestate apparuisse quandoque coruscationem quandam absque manifesto calore. Atque paucis abhinc annis, notissimum est et pro miraculo quasi habitum gremiale cujusdam puellae paulo motum aut fricatum coruscasse; quod fortasse factum est ob alumen aut sales quibus gremiale tinctum erat paulo crassius haerentia et incrustata, et ex fricatione fracta. Atque certissimum est saccharum omne, sive conditum (ut vocant) sive simplex, modo sit durius, in tenebris fractum aut cultello scalptum coruscare.

Similiter aqua marina et salsa noctu interdum invenitur, remis fortiter percussa, coruscare. Atque etiam in tempestatibus spuma maris fortiter agitata noctu coruscat; quam coruscationem Hispani pulmonem marinum vocant. De illa flamma autem quam antiqui nautae vocabant Castorem et Pollucem, et moderni Focum Sancti Ermi, qualem calorem habeat non satis quaesitum est.

Ad 7am 12a.

Omne ignitum ita ut vertatur in ruborem igneum etiam sine flamma perpetuo calidum est, neque huic affirmativae subjungitur negativa; sed quod in proximo est videtur esse lignum putre, quod splendet noctu neque tamen deprehenditur calidum; et squamae piscium putrescentes, quae etiam splendent noctu, nec inveniuntur ad tactum calidae; neque etiam corpus cicindelae aut muscae (quam vocant luciolam) calidum ad tactum deprehenditur.

Ad 8am 13a.

De balneis calidis, in quo situ et natura soli emanare soleant, non satis quaesitum est; itaque non subjungitur negativa.

Ad 9am 14a

Liquidis ferventibus subjungitur negativa ipsius liquidi in natura sua. Nullum enim invenitur liquidum tangibile quod sit in natura sua et maneat constanter calidum, sed superinducitur ad tempus tantum calor, ut natura ascititia: adeo ut quae potestate et operatione sunt maxime calida, ut spiritus vini, olea aromatum chymica, etiam olea vitrioli et sulphuris, et similia, quae paulo post adurunt, ad primum tactum sint frigida. Aqua autem balneorum naturalium excepta in vas aliquod et separata a fontibus suis defervescit perinde ac aqua igne calefacta. At verum est corpora oleosa ad tactum paulo minus esse frigida quam aquea; ut oleum minus quam aqua, sericum minus quam linteum. Verum hoc pertinet ad Tabulam Graduum de Frigido.

Ad 10am 15a.

Similiter vapori fervido subjungitur negativa naturae ipsius vaporis, qualis apud nos invenitur. Etenim exhalationes ex oleosis, licet facile inflammabiles, tamen non inveniuntur calidae, nisi a corpore calido recenter exhalaverint.

Ad 10am 16a.

Similiter aeri ipsi ferventi subjungitur negativa naturae aeris ipsius. Neque enim invenitur apud nos aer calidus; nisi fuerit aut conclusus, aut attritus, aut manifeste calefactus a sole, igne, aut aliquo alio corpore calido.

Ad 11am 17a.

Subjungitur negativa tempestatum frigidarum magis quam pro ratione temporis anni, quae eveniunt apud nos flante Euro et Borea; quemadmodum et contrariae tempestates eveniunt flante Austro et Zephyro. Etaim inclinatio ad pluviam (praesertim temporibus hyemalibus) comitatur tempestatem tepidam; at gelu contra frigidam.

Ad 12am 18a.

Subjungitur negativa aeris conclusi in cavernis tempore aestivo. At de aere concluso omnino diligentius inquirendum. Primo enim non absque causa in dubitationem venit, qualis sit natura aeris quatenus ad calidum et frigidum in natura sua propria. Recipit enim aer calidum manifesto ex impressione coelestium; frigidum autem fortasse ab expiratione terrae; et rursus in media (quam vocant) regione aeris a vaporibus frigidis et nivibus: ut nullum judicium fieri possit de aeris natura per aerem qui foras est et sub dio, sed verius foret judicium per aerem conclusum. Atqui opus est etiam ut aer concludatur in tali vasi et materia quae nec ipsa imbuat aerem calido vel frigido ex vi propria, nec facile admittat vim aeris extranei. Fiat itaque experimentum per ollam figularem multiplici corio obductam ad muniendam ipsam ab aere extraneo, facta mora per tres aut quatuor dies in vase bene occluso; deprehensio autem fit post apertionem vasis vel per manum vel per vitrum graduum ordine applicatum.

Ad 13am 19a.

Subest similiter dubitatio, utrum tepor in lana et pellibus et plumis et hujusmodi fiat ex quodam exili calore inhaerente, quatenus excernuntur ab animalibus; aut etiam ob pinguedinem quandam et oleositatem, quae sit naturae congruae cum tepore; vel plane ob conclusionem et fractionem aeris, ut in articulo praecedente dictum est. Videtur enim omnis aer abscissus a continuitate aeris forinseci habere nonnihil teporis. Itaque fiat experimentum in fibrosis quae fiunt ex lino; non ex lana aut plumis aut serico, quae excernuntur ab animatis.

Notandum est etiam, omnes pulveres (ubi manifesto includitur aer) minus esse frigidos quam corpora integra ipsorum; quemadmodum etiam existimamus omnem spumam (utpote quae aerem contineat) minus esse frigidam quam liquorem ipsum.

Ad 14am 20a.

Huic non subjungitur negativa. Nihil enim reperitur apud nos sive tangibile sive spiritale, quod admotum igni non excipiat calorem. In eo tamen differunt, quod alia excipiant calorem citius, ut aer, oleum, et aqua; alia tardius, ut lapis et metalla. Verum hoc pertinet ad Tabulam Graduum.

Ad 15am 21a.

Huic Instantiae non subjungitur negativa alia, quam ut bene notetur non excitari scintillas ex silice et chalybe aut alia aliqua substantia dura nisi ubi excutiuntur minutiae aliquae ex ipsa substantia lapidis vel metalli, neque aerem attritum unquam per se generare scintillas, ut vulgo putant; quin et ipsae illae scintillae ex pondere corporis igniti magis vergunt deorsum quam sursum, et in extinctione redeunt in quandam fuliginem corpoream.

Ad 16am 22a.

Existimamus huic instantiae non subjungi negativam. Nullum enim invenitur apud nos corpus tangibile, quod non ex attritione manifesto calescat; adeo ut veteres somniarent non inesse coelestibus aliam viam aut virtutem calefaciendi nisi ex attritione aeris per rotationem rapidam et incitatam. Verum in hoc genere ulterius inquirendum est, utrum corpora quae emittuntur ex machinis (qualia sunt pilae ex tormentis) non ex ipsa percussione contrahant aliquem gradum caloris; adeo ut postquam deciderint inveniantur nonnihil calida. At aer motus magis infrigidat quam calefacit; ut in ventis et follibus et flatu oris contracti. Verum hujusmodi motus non est tam rapidus ut excitet calorem, et fit secundum totum, non per particulas; ut mirum non sit, si non generet calorem.

Ad 17am 23a.

Circa hanc instantiam facienda est inquisitio diligentior. Videntur enim herbae et vegetabilia viridia et humida aliquid habere in se occulti caloris. Ille vero calor tam tenuis est ut in singulis non percipiatur ad tactum; verum

postquam illa adunata sint et conclusa, ut spiritus ipsorum non expiret in aerem sed se invicem foveat, tum vero oritur calor manifestus, et nonnunquam flamma in materia congrua.

Ad 18am 24a.

Etiam circa hanc instantiam diligentior facienda est inquisitio. Videtur enim calx viva aqua aspersa concipere calorem vel propter unionem caloris qui antea distrahebatur (ut ante dictum est de herbis conclusis), vel ob irritationem ex exasperationem spiritus ignei ab aqua, ut fiat quidam conflictus et antiperistasis. Utra vero res sit in causa facilius apparebit, si loco aquae immittatur oleum; oleum enim aeque ac aqua valebit ad unionem spiritus inclusi, sed non ad irritationem. Etiam faciendum est experimentum latius tam in cineribus et calcibus diversorum corporum, quam per immissionem diversorum liquorum.

Ad 19am 25a.

Huic instantiae subjungitur negativa aliorum metallorum, quae sunt magis mollia et fluxa. Etenim bracteolae auri, solutae in liquorem per aquam regis, nullum dant calorem ad tactum in dissolutione; neque similiter plumbum in aqua forti; neque etiam argentum vivum (ut memini); sed argentum ipsum parum excitat caloris, atque etiam cuprum (ut memini), sed magis manifesto stannum, atque omnium maxime ferrum et chalybs, quae non solum fortem excitant calorem in dissolutione, sed etiam violentam ebullitionem. Itaque videtur calor fieri per conflictum, cum aquae fortes penetrant et fodiunt et divellunt partes corporis, et corpora ipsa resistunt. Ubi vero corpora facilius cedunt, vix excitatur calor.

Ad 20am 26a.

Calori animalium nulla subjungitur negativa, nisi insectorum (ut dictum est) ob parvitatem corporis. Etenim in piscibus collatis ad animalia terrestria magis notatur gradus caloris quam privatio. In vegetabilibus autem et plantis nullus percipitur gradus caloris ad tactum, neque in lachrymis ipsorum, neque in medullis recenter apertis. At in animalibus magna reperitur diversitas caloris, tum in partibus ipsorum (alius est enim calor circa cor, alius in cerebro, alius

circa externa), tum in accidentibus eorum, ut in exercitatione vehementi et febribus.

Ad 21am 27a.

Huic instantiae vix subjungitur negativa. Quinetiam excrementa animalium non recentia manifeste habent calorem potentialem, ut cernitur in impinguatione soli.

Ad 22am et 23am 28a.

Liquores (sive aquae vocentur sive olea) qui habent magnam et intensam acrimoniam exequuntur opera caloris in divulsione corporum, atque adustione post aliquam moram; sed tamen ad ipsum tactum manus non sunt calidi ab initio. Operantur autem secundum analogiam et poros corporis cui adjunguntur. Aqua enim regis aurum solvit, argentum minime; at contra aqua fortis argentum solvit, aurum minime; neutrum autem solvit vitrum. Et sic de caeteris.

Ad 24am 29a.

Fiat experimentum spiritus vini in lignis, ac etiam in butyro aut cera aut pice; si forte per calorem suum ea aliquatenus liquefaciat. Etenim instantia 24a ostendit potestatem ejus imitativam caloris in incrustationibus. Itaque fiat similiter experimentum in liquefactionibus. Fiat etiam experimentum per vitrum graduum sive calendare quod concavum sit in summitate sua per exterius; et immittatur in illud concavum exterius spiritus vini bene rectificatus, cum operculo, ut melius contineat calorem suum; et notetur utrum per calorem suum faciat aquam descendere.

Ad 25am 30a.

Aromata, et herbae acres ad palatum, multo magis sumptae interius, percipiuntur calida. Videndum itaque in quibus aliis materiis exequantur opera caloris. Atque referunt nautae, cum cumuli et massae aromatum diu conclusae subito aperiuntur, periculum instare illis, qui eas primo agitant et extrahunt, a febribus et inflammationibus spiritus. Similiter fieri poterit experimentum, utrum pulveres hujusmodi aromatum aut herbarum non arefaciant laridum et carnem suspensam super ipsos, veluti fumus ignis.

Ad 26am 31a.

Acrimonia sive penetratio inest tam frigidis, qualia sunt acetum et oleum vitrioli, quam calidis, qualia sunt oleum origani et similia. Itaque similiter et in animatis cient dolorem et in non animatis divellunt partes et consumunt. Neque huic instantiae subjungitur negativa. Atque in animatis nullus reperitur dolor, nisi cum quodam sensu caloris.

Ad 27am 32a.

Communes sunt complures actiones et calidi et frigidi, licet diversa admodum ratione. Nam et nives puerorum manus videntur paulo post urere; et frigora tuentur carnes a putrefactione, non minus quam ignis; et calores contrahunt corpora in minus, quod faciunt et frigida. Verum haec et similia opportunius est referre ad Inquisitionem de Frigido.

XIII.

Tertio facienda est comparentia ad intellectum instantiarum in quibus natura, de qua fit inquisitio, inest secundum magis et minus; sive facta comparatione incrementi et decrementi in eodem subjecto, sive facta comparatione ad invicem in subjectis diversis. Cum enim forma rei sit ipsissima res; neque differat res a forma, aliter quam differunt apparens et existens, aut exterius et interius, aut in ordine ad hominem et in ordine ad universum; omnino sequitur ut non recipiatur aliqua natura pro vera forma, nisi perpetuo decrescat quando natura ipsa decrescit, et similiter perpetuo augeatur quando natura ipsa augetur. Hanc itaque tabulam Tabulam Graduum sive Tabulam Comparativae appellare consuevimus.

Tabula Graduum sive Comparativae in Calido.

Primo itaque dicemus de iis quae nullum prorsus gradum caloris habent ad tactum, sed videntur habere potentialem tantum quendam calorem, sive dispositionem et praeparationem ad calidum. Postea demum descendemus ad ea quae sunt actu sive ad tactum calida, eorumque fortitudines et gradus.

1. In corporibus solidis et tangibilibus non invenitur aliquid quod in natura sua calidum sit originaliter. Non enim lapis aliquis, non metallum, non suphur, non fossile aliquod, non lignum, non aqua, non cadaver animalis, inveniuntur

calida. Aquae autem calidae in balneis videntur calefieri per accidens, sive per flammam aut ignem subterraneum, qualis ex Aetna et montibus aliis compluribus evomitur, sive ex conflictu corporum, quemadmodum calor fit in ferri et stanni dissolutionibus. Itaque gradus caloris in inanimatis, quatenus ad tactum humanum, nullus est; veruntamen illa gradu frigoris differunt; non enim aeque frigidum est lignum ac metallum. Sed hoc pertinet ad Tabulam Graduum in Frigido.

2. Attamen quoad potentiales calores et praeparationes ad flammam, complura inveniuntur inanimata admodum disposita, ut sulphur, naphtha, petrelaeum.

3. Quae antea incaluerunt, ut fimus equinus ex animali, aut calx, aut fortasse cinis aut fuligo ex igne, reliquias latentes quasdam caloris prioris retinent. Itaque fiunt quaedam distillationes et separationes corporum per sepulturam in fimo equino; atque excitatur calor in calce per aspersionem aquae; ut jam dictum est.

4. Inter vegetabilia non invenitur aliqua planta sive pars plantae (veluti lachryma aut medulla) quae sit ad tactum humanum calida. Sed tamen (ut superius dictum est) herbae virides conclusae calescunt; atque ad interiorem tactum, veluti ad palatum aut ad stomachum aut etiam ad exteriores partes, post aliquam moram (ut in emplastris et unguentis) alia vegetabilia inveniuntur calida, alia frigida.

5. Non invenitur in partibus animalium, postquam fuerint mortuae aut separatae, aliquid calidum ad tactum humanum. Nam neque fimus equinus ipse, nisi fuerit conclusus et sepultus, calorem retinet. Sed tamen omnis fimus habere videtur calorem potentialem, ut in agrorum impinguatione. Et similiter, cadavera animalium hujusmodi habent latentem et potentialem calorem; adeo ut in coemeteriis, ubi quotidie fiunt sepulturae, terra calorem quendam occultum colligat, qui cadaver aliquod recenter impositum consumit longe citius quam terra pura. Atque apud orientales traditur inveniri textile quoddam tenue et molle, factum ex avium plumagine, quod vi innata butyrum solvat et liquefaciat in ipso leviter involutum.

6. Quae impinguant agros, ut fimi omnis generis, creta, arena maris, sal, et similia, dispositionem nonnullam habent ad calidum.

7. Omnis putrefactio in se rudimenta quaedam exilis caloris habet, licet non hucusque ut ad tactum percipiatur. Nam nec ea ipsa quae putrefacta solvuntur in animalcula, ut caro, caseus, ad tactum percipiuntur calida; neque lignum putre, quod noctu splendet, deprehenditur ad tactum calidum. Calor autem in putridis quandoque se prodit per odores tetros et fortes.

8. Primus itaque caloris gradus, ex iis quae ad tactum humanum percipiuntur calida, videtur esse calor animalium, qui bene magnam habet graduum latitudinem. Nam infimus gradus (ut in insectis) vix ad tactum deprenditur; summus autem gradus vix attingit ad gradum caloris radiorum solis in regionibus et temporibus maxime ferventibus, neque ita acris est quin tolerari possit a manu. Et tamen referunt de Constantio, aliisque nonnullis qui constitutionis et habitus corporis admodum sicci fuerunt, quod acutissimis febribus correpti ita incaluerint ut manum admotam aliquantulum urere visi sint.

9. Animalia, ex motu et exercitatione, ex vino et epulis, ex venere, ex febribus ardentibus, et ex dolore, augentur calore.

10. Animalia, in accessibus febrium intermittentium, a principio frigore et horrore corripiuntur, sed paulo post majorem in modum incalescunt; quod etiam faciunt a principio in causonibus et febribus pestilentialibus.

11. Inquiratur ulterius de calore comparato in diversis animalibus, veluti piscibus, quadrupedibus, serpentibus, avibus; atque etiam secundum species ipsorum, ut in leone, milvio, homine; nam ex vulgari opinione, pisces per interiora minus calidi sunt, aves autem maxime calidae; praesertim columbae, accipitres, struthiones.

12. Inquiratur ulterius de calore comparato in eodem animali, secundum partes et membra ejus diversa. Nam lac, sanguis, sperma, ova, inveniuntur gradu modico tepida, et minus calida quam ipsa caro exterior in animali quando movetur aut agitatur. Qualis vero gradus sit caloris in cerebro, stomacho, corde, et reliquis, similiter adhuc non est quaesitum.

13. Animalia omnia, per hyemem et tempestates frigidas, secundum exterius frigent; sed per interiora etiam magis esse calida existimantur.

14. Calor coelestium, etiam in regione calidissima atque temporibus anni et diei calidissimis, non eum gradum caloris obtinet, qui vel lignum aridissimum vel stramen vel etiam linteum ustum incendat aut adurat, nisi per specula comburentia roboretur; sed tamen e rebus humidis vaporem excitare potest.

15. Ex traditione astronomorum ponuntur stellae aliae magis, aliae minus calidae. Inter planetas enim post solem ponitur Mars calidissimus, deinde Jupiter, deinde Venus; ponuntur autem tanquam frigidi Luna et deinde omnium maxime Saturnus. Inter fixas autem ponitur calidissimus Sirius, deinde Cor Leonis, sive Regulus, deinde Canicula, *etc.*

16. Sol magis calefacit, quo magis vergit ad perpendiculum sive Zenith, quod etiam credendum est de aliis planetis, pro modulo suo caloris; exempli gratia, Jovem magis apud nos calefacere, cum positus sit sub Cancro aut Leone quam sub Capricorno aut Aquario.

17. Credendum est solem ipsum et planetas reliquos magis calefacere in perigaeis suis, propter propinquitatem ad terram, quam in apogaeis. Quod si eveniat ut in aliqua regione sol sit simul in perigaeo et propius ad perpendiculum, necesse est ut magis calefaciat quam in regione ubi sol sit similiter in perigaeo sed magis ad obliquum. Adeo ut comparatio exaltationis planetarum notari debeat, prout ex perpendiculo aut obliquitate participet, secundum regionum varietatem.

18. Sol etiam, et similiter reliqui planetae calefacere magis existimantur cum sint in proximo ad stellas fixas majores; veluti cum sol ponitur in Leone, magis vicinus fit Cordi Leonis, Caudae Leonis, et Spicae Virginis, et Sirio, et Caniculae, quam cum ponitur in Cancro, ubi tamen magis sistitur ad perpendiculum. Atque credendum est partes coeli majorem infundere calorem (licet ad tactum minime perceptibilem) quo magis ornatae sint stellis, praesertim majoribus.

19. Omnino calor coelestium augetur tribus modis; videlicet ex perpendiculo, ex propinquitate sive perigaeo, et ex conjunctione sive consortio stellarum.

20. Magnum omnino invenitur intervallum inter calorem animalium ac etiam radiorum coelestium (prout ad nos deferuntur), atque flammam, licet lenissimam, atque etiam ignita omnia, atque insuper liquores, aut aerem ipsum majorem in modum ab igne calefactum. Etenim flamma spiritus vini, praesertim rara nec constipata, tamen potis est stramen aut linteum aut papyrum incendere; quod nunquam faciet calor animalis vel solis, absque speculis comburentibus.

21. Flammae autem et ignitorum plurimi sunt gradus in fortitudine et debilitate caloris. Verum de his nulla est facta diligens inquisitio; ut necesse sit ista leviter transmittere. Videtur autem ex flammis illa ex spiritu vini esse mollissima; nisi forte ignis fatuus, aut flammae seu coruscationes ex sudoribus animalium, sint molliores. Hanc sequi opinamur flammam ex vegetabilibus levibus et porosis, ut stramine, scirpis, et foliis arefactis, a quibus non multum differre flammam ex pilis aut plumis. Hanc sequitur fortasse flamma ex lignis, praesertim iis quae non multum habent ex resina aut pice; ita tamen ut flamma ex lignis quae parva sunt mole (quae vulgo colligantur in fasciculos) lenior sit quam quae fit ex truncis arborum et radicibus. Id quod vulgo experiri licet in fornacibus quae ferrum excoquunt, in quibus ignis ex fasciculis et ramis arborum non est admodum utilis. Hanc sequitur (ut arbitramur) flamma ex oleo et sevo et cera, et hujusmodi oleosis et pinguibus, quae sunt sine magna acrimonia. Fortissimus autem calor reperitur in pice et resina; atque adhuc magis in sulphure et caphura, et naphtha et petrelaeo et salibus (postquam materia cruda eruperit), et in horum compositionibus, veluti pulvere tormentario, igne Graeco (quem vulgo ignem ferum vocant), et diversis ejus generibus, quae tam obstinatum habent calorem ut ab aquis non facile exstinguantur.

22. Existimamus etiam flammam, quae resultat ex nonnullis metallis imperfectis, esse valde robustam et acrem. Verum de istis omnibus inquiratur ulterius.

23. Videtur autem flamma fulminum potentiorum has omnes flammas superare; adeo ut ferrum ipsum perfectum aliquando colliquaverit in guttas, quod flammae illae alterae facere non possunt.

24. In ignitis autem diversi sunt etiam gradus caloris, de quibus etiam non facta est diligens inquisitio. Calorem maxime debilem existimamus esse ex linteo usto, quali ad flammae excitationem uti solemus; et similiter ex ligno illo spongioso aut funiculis arefactis qui ad tormentorum accensionem adhibentur. Post hunc sequitur carbo ignitus ex lignis et anthracibus, atque etiam ex lateribus ignitis, et similibus. Ignitorum autem vehementissime calida existimamus esse metalla ignita, ut ferrum et cuprum et caetera. Verum de his etiam facienda est ulterior inquisitio.

25. Inveniuntur ex ignitis nonnulla longe calidiora quam nonnullae ex flammis. Multo enim calidius est et magis adurens ferrum ignitum quam flamma spiritus vini.

26. Inveniuntur etiam ex illis quae ignita non sunt sed tantum ab igne calefacta, sicut aquae ferventes et aer conclusus in reverberatoriis, nonnulla quae superant calore multa ex flammis ipsis et ignitis.

27. Motus auget calorem; ut videre est in follibus et flatu; adeo ut duriora ex metallis non solvantur aut liquefiant per ignem mortuum aut quietum, nisi flatu excitetur.

28. Fiat experimentum per specula comburentia, in quibus (ut memini) hoc fit; ut si speculum ponatur (exempli gratia) ad distantiam spithamae ab objecto combustibili, non tantopere incendat aut adurat quam si positum fuerit speculum (exempli gratia) ad distantiam semi spithamae, et gradatim et lente trahatur ad distantiam spithamae. Conus tamen et unio radiorum eadem sunt, sed ipse motus auget operationem caloris.

29. Existimantur incendia illa, quae fiunt flante vento forti, majores progressus facere adversus ventum quam secundum ventum; quia scilicet flamma resilit motu perniciore, vento remittente, quam procedit, vento impellente.

30. Flamma non emicat aut generatur, nisi detur aliquid concavi in quo flamma movere possit et ludere; praeterquam in flammis flatuosis pulveris tormentarii, et similibus, ubi compressio et incarceratio flammae auget ejus furorem.

31. Incus per malleum calefit admodum; adeo ut si incus fuerit laminae tenuioris, existimemus illam per fortes et continuos ictus mallei posse rubescere, ut ferum ignitum; sed de hoc fiat experimentum.

32. At in ignitis quae sunt porosa, ita ut detur spatium ad exercendum motum ignis, si cohibeatur hujusmodi motus per compressionem fortem, statim extinguitur ignis; veluti cum linteum ustum aut filum ardens candelae aut lampadis aut etiam carbo aut pruna ardens comprimitur per pressorium aut pedis conculcationem aut hujusmodi, statim cessant operationes ignis.

33. Approximatio ad corpus calidum auget calorem, pro gradu approximationis; quod etiam fit in lumine: nam quo proprius collocatur objectum ad lumen eo magis est visibile.

34. Unio calorum diversorum auget calorem, nisi facta sit commistio corporum. Nam focus magnus et focus parvus in eodem loco nonnihil invicem augent calorem; at aqua tepida immissa in aquam ferventem refrigerat.

35. Mora corporis calidi auget calorem. Etenim calor perpetuo transiens et emanans commiscetur cum calore praeinexistente, adeo ut multiplicet calorem. Nam focus non aeque calefacit cubiculum per moram semihorae ac si idem focus duret per horam integram. At hoc non facit lumen; etenim lampas aut candela in aliquo loco posita non magis illuminat per moram diuturnam quam statim ab initio.

36. Irritatio per frigidum ambiens auget calorem; ut in focis videre est per gelu acre. Quod existimamus fieri non tantum per conclusionem et contractionem caloris, quae est species unionis, sed per exasperationem; veluti cum aer aut baculum violenter comprimitur aut flectitur, non ad punctum loci prioris resilit, sed ulterius in contrarium. Itaque fiat diligens experimentum per baculum vel simile aliquid immissum in flammam, utrum ad latera flammae non uratur citius quam in medio flammae.

37. Gradus autem in susceptione caloris sunt complures. Atque primo omnium notandum est, quam parvus et exilis calor etiam ea corpora, quae caloris minime omnium sunt susceptiva, immutet tamen et nonnihil calefaciat. Nam ipse calor manus globulum plumbi aut alicujus metalli paulisper detentum nonnihil

calefacit. Adeo facile et in omnibus transmittitur et excitatur calor, corpore nullo modo ad apparentiam immutato.

38. Facillime omnium corporum apud nos et excipit et remittit calorem aer; quod optime cernitur in vitris calendaribus. Eorum confectio est talis: accipiatur vitrum ventre concavo, collo tenui et oblongo; resupinetur et demittatur hujusmodi vitrum, ore deorsum verso, ventre sursum, in aliud vasculum vitreum ubi sit aqua, tangendo fundum vasculi illius recipientis extremo ore vitri immissi, et incumbat paullulum vitri immissi collum ad os vitri recipientis, ita ut stare possit; quod ut commodius fiat, apponatur parum cerae ad os vitri recipientis; ita tamen ut non penitus obturetur os ejus, ne ob defectum aeris succedentis impediatur motus de quo jam dicetur, qui est admodum facilis et delicatus.

Oportet autem ut vitrum demissum, antequam inseratur in alterum, calefiat ad ignem a parte superiori, ventre scilicet. Postquam autem fuerit vitrum illud collocatum, ut diximus, recipiet et contrahet se aer (qui dilatatus erat per calefactionem), post moram sufficientem pro extinctione illius ascititii caloris, ad talem extensionem sive dimensionem qualis erit aeris ambientis aut communis tunc temporis quando immittitur vitrum, atque attrahet aquam in sursum ad hujusmodi mensuram. Debet autem appendi charta angusta et oblonga, et gradibus (quot libuerit) interstincta. Videbis autem, prout tempestas diei incalescit aut frigescit, aerem se contrahere in angustius per frigidum et extendere se in latius per calidum; id quod conspicietur per aquam ascendentem quando contrahitur aer, et descendentem sive depressum quando dilatatur aer. Sensus autem aeris, quatenus ad calidum et frigidum, tam subtilis est et exquisitus ut facultatem tactus humani multum superet; adeo ut solis radius aliquis, aut calor anhelitus, multo magis calor manus, super vitri summitatem positus, statim deprimat aquam manifesto. Attamen existimamus spiritum animalium magis adhuc exquisitum sensum habere calidi et frigidi, nisi quod a mole corporea impediatur et hebetetur.

39. Post aerem, existimamus corpora esse maxime sensitiva caloris ea quae a frigore recenter immutata sint et compressa, qualia sunt nix et glacies; ea enim

leni aliquo tepore solvi incipiunt et colliquari. Post illa sequitur fortasse argentum vivum. Post illud sequuntur corpora pinguia, ut oleum butyrum, et similia; deinde lignum; deinde aqua; postremo lapides et metalla, quae non facile calefiunt, praesertim interius. Illa tamen calorem semel susceptum diutissime retinent; ita ut later aut lapis aut ferrum ignitum in pelvim aquae frigidae immissum et demersum, per quartam partem horae (plus minus) retineat calorem, ita ut tangi non possit.

40. Quo minor est corporis moles, eo citius per corpus calidum approximatum incalescit; id quod demonstrat omnem calorem apud nos esse corpori tangibili quodammodo adversum.

41. Calidum, quatenus ad sensum et tactum humanum, res varia est et respectiva: adeo ut aqua tepida, si manus frigore occupetur, sentiatur esse calida; sin manus incaluerit, frigida.

XIV.

Quam inopes simus historiae quivis facile advertet, cum in tabulis superioribus, praeterquam quod loco historiae probatae et instantiarum certarum nonnunquam traditiones et relationes inseramus (semper tamen adjecta dubiae fidei et auctoritatis nota), saepenumero etiam hisce verbis, fiat experimentum, vel inquiratur ulterius, uti cogamur.

XV.

Atque opus et officium harum trium tabularum Comparentiam instantiarum ad intellectum vocare consuevimus. Facta autem comparentia, in opere ponenda est ipsa inductio. Invenienda est enim, super comparentiam omnium et singularum instantiarum, natura talis, quae cum natura data perpetuo adsit, absit, atque crescat, et decrescat; sitque (ut superius dictum est) limitatio naturae magis communis. Hoc si mens jam ab initio facere tentet affirmative (quod sibi permissa semper facere solet), occurrent phantasmata et opinabilia et notionalia male terminata et axiomata quotidie emendanda; nisi libeat (scholarum more)

pugnare pro falsis. Ea tamen proculdubio erunt meliora aut praviora pro facultate et robore intellectus qui operatur. At omnino Deo (formarum inditori et opifici) aut fortasse angelis et intelligentiis competit formas per affirmationem immediate nosse, atque ab initio contemplationis. Sed certe supra hominem est; cui tantum conceditur, procedere primo per negativas, et postremo loco desinere in affirmativas, post omnimodam exclusionem.

XVI.

Itaque naturae facienda est prorsus solutio et separatio; non per ignem certe, sed per mentem, tanquam ignem divinum. Est itaque inductionis verae opus primum (quatenus ad inveniendas formas) rejectio sive exclusiva naturarum singularum, quae non inveniuntur in aliqua instantia, ubi natura data adest; aut inveniuntur in aliqua instantia, ubi natura data abest; aut inveniuntur in aliqua instantia crescere, cum natura data decrescat; aut decrescere, cum natura data crescat. Tum vero post rejectionem et exclusivam debitis modis factam, secundo loco (tanquam in fundo) manebit (abeuntibus in fumum opinionibus volatilibus) forma affirmativa, solida, et vera, et bene terminata. Atque hoc breve dictu est, sed per multas ambages ad hoc pervenitur. Nos autem nihil fortasse ex iis, quae ad hoc faciunt, praetermittemus.

XVII.

Cavendum autem est, et monendum quasi perpetuo, ne, cum tantae partes formis videantur a nobis tribui, trahantur ea, quae dicimus, ad formas eas, quibus hominum contemplationes et cogitationes hactenus assueverunt.
Primo enim, de formis copulatis, quae sunt (ut diximus) naturarum simplicium conjugia ex cursu communi universi, ut leonis, aquilae, rosae, auri, et hujusmodi, impraesentiarum non loquimur. Tempus enim erit de iis tractandi, cum ventum fuerit ad latentes processus, et latentes schematismos, eorumque inventionem, prout reperiuntur in substantiis (quas vocant) seu naturis concretis.
Rursus vero, non intelligantur ea quae dicimus (etiam quatenus ad naturas

simplices) de formis et ideis abstractis, aut in materia non determinatis, aut male determinatis. Nos enim, quum de formis loquimur, nil aliud intelligimus quam leges illas et determinationes actus puri, quae naturam aliquam simplicem ordinant et constituunt, ut calorem, lumen, pondus, in omnimoda materia et subjecto susceptibili. Itaque eadem res est forma calidi aut forma luminis, et lex calidi sive lex luminis; neque vero a rebus ipsis et parte operativa unquam nos abstrahimus aut recedimus. Quare cum dicimus (exempli gratia) in inquisitione formae caloris, Rejice tenuitatem, aut Tenuitas non est ex forma caloris; idem est ac si dicamus, Potest homo superinducere calorem in corpus densum, aut contra, Potest homo auferre aut arcere calorem a corpore tenui.

Quod si cuiquam videantur etiam formae nostrae habere nonnihil abstracti, quod misceant et conjungant heterogenea (videntur enim valde esse heterogenea calor coelestium, et ignis; rubor fixus in rosa aut similibus, et apparens in iride aut radiis opalii aut adamantis; mors ex summersione, ex crematione, ex punctura gladii, ex apoplexia, ex atrophia; et tamen conveniunt ista in natura calidi, ruboris, mortis), is se habere intellectum norit consuetudine et integralitate rerum et opinionibus captum et detentum. Certissimum enim est ista, utcunque heterogenea et aliena, coire in formam sive legem eam, quae ordinat calorem, aut ruborem, aut mortem; nec emancipari posse potentiam humanam et liberari a naturae cursu communi, et expandi et exaltari ad efficientia nova et modos operandi novos, nisi per revelationem et inventionem hujusmodi formarum; et tamen post istam unionem naturae, quae est res maxime principalis, de naturae divisionibus et venis, tam ordinariis quam interioribus et verioribus, suo loco postea dicetur.

XVIII.

Jam vero proponendum est exemplum exclusionis sive rejectionis naturarum, quae per tabulas comparentiae reperiuntur non esse ex forma calidi; illud interim monendo, non solum sufficere singulas tabulas ad rejectionem alicujus naturae, sed etiam unamquamque ex instantiis singularibus in illis contentis. Manifestum

enim est ex iis, quae dicta sunt, omnem instantiam contradictoriam destruere opinabile de forma. Sed nihilominus quandoque perspicuitatis causa, et ut usus tabularum clarius demonstretur, exclusivam duplicamus aut repetimus.

Exemplum exclusivae, sive rejectionis naturarum a forma calidi.

1. Per radios solis, rejice naturam elementarem.

2. Per ignem communem, et maxime per ignes subterraneos (qui remotissimi sunt, et plurimum intercluduntur a radiis coelestibus), rejice naturam coelestem.

3. Per calefactionem omnigenum corporum (hoc est, mineralium, vegetabilium, partium exteriorum animalium, aquae, olei, aeris, et reliquorum) ex approximatione sola ad ignem aut aliud corpus calidum, rejice omnem varietatem sive subtiliorem texturam corporum.

4. Per ferrum et metalla ignita, quae calefaciunt alia corpora, nec tamen omnino pondere aut substantia minuuntur, rejice inditionem sive mixturam substantiae alterius calidi.

5. Per aquam ferventem atque aerem, atque etiam per metalla et alia solida calefacta, sed non usque ad ignitionem sive ruborem, rejice lucem et lumen.

6. Per radios lunae et aliarum stellarum (excepto sole), rejice etiam lucem et lumen.

7. Per comparativam ferri igniti et flammae spiritus vini (ex quibus ferrum ignitum plus habet calidi et minus lucidi, flamma autem spiritus vini plus lucidi et minus calidi), rejice etiam lucem et lumen.

8. Per aurum et alia metalla ignita, quae densissimi sunt corporis secundum totum, rejice tenuitatem.

9. Per aerem, qui invenitur ut plurimum frigidus, et tamen manet tenuis, rejice etiam tenuitatem.

10. Per ferrum ignitum, quod non intumescit mole, sed manet intra eandem dimensionem visibilem, rejice motum localem aut expansivum secundum totum.

11. Per dilatationem aeris in vitris calendariis et similibus, qui movetur localiter et expansive manifesto, neque tamen colligit manifestum augmentum caloris, rejice etiam motum localem aut expansivum secundum totum.

12. Per facilem tepefactionem omnium corporum, absque aliqua destructione aut alteratione notabili, rejice naturam destructivam aut inditionem violentam alicujus naturae novae.

13. Per consensum et conformitatem operum similium quae eduntur a calore et a frigore, rejice motum tam expansivum quam contractivum secundum totum.

14. Per accensionem caloris ex attritione corporum, rejice naturam principialem. Naturam principialem vocamus eam, quae positiva reperitur in natura, nec causatur a natura praecedente.

Sunt et aliae naturae: neque enim tabulas conficimus perfectas, sed exempla tantum.

Omnes et singulae naturae praedictae non sunt ex forma calidi. Atque ab omnibus naturis praedictis liberatur homo in operatione super calidum.

XIX.

Atque in exclusiva jacta sunt fundamenta inductionis verae, quae tamen non perficitur donec sistatur in affirmativa. Neque vero ipsa exclusiva ullo modo perfecta est, neque adeo esse potest sub initiis. Est enim exclusiva (ut plane liquet) rejectio naturarum simplicium. Quod si non habeamus adhuc bonas et veras notiones naturarum simplicium, quomodo rectificari potest exclusiva? At nonnullae ex supradictis (veluti notio naturae elementaris, notio naturae coelestis, notio tenuitatis) sunt notiones vagae, nec bene terminatae. Itaque nos, qui nec ignari sumus nec obliti quantum opus aggrediamur (viz. ut faciamus intellectum humanum rebus et naturae parem), nullo modo acquiescimus in his, quae adhuc praecepimus: sed et rem in ulterius provehimus, et fortiora auxilia in usum intellectus machinamur et ministramus; quae nunc subjungemus. Et certe in interpretatione naturae animus omnino taliter est praeparandus et formandus, ut et sustineat se in gradibus debitis certitudinis, et tamen cogitet (praesertim sub initiis) ea quae adsunt multum pendere ex iis quae supersunt.

XX.

Attamen quia citius emergit veritas ex errore quam ex confusione, utile putamus, ut fiat permissio intellectui, post tres tabulas comparentiae primae (quales posuimus) factas et pensitatas, accingendi se et tentandi opus interpretationis naturae in affirmativa; tam ex instantiis tabularum, quam ex iis quae alias occurrent. Quod genus tentamenti, permissionem intellectus, sive interpretationem inchoatam, sive vindemiationem primam appellare consuevimus.

Vindemiatio prima de forma calidi.

Animadvertendum autem est, formam rei inesse (ut ex iis quae dicta sunt plane liquet) instantiis universis et singulis, in quibus res ipsa inest; aliter enim forma non esset: itaque nulla plane dari potest instantia contradictoria. Attamen longe magis conspicua invenitur forma et evidens in aliquibus instantiis, quam in aliis; in iis videlicet, ubi minus cohibita est natura formae et impedita et redacta in ordinem per naturas alias. Hujusmodi autem instantias, elucescentias vel instantias ostensivas appellare consuevimus. Pergendum itaque est ad vindemiationem ipsam primam de forma calidi.

Per universas et singulas instantias, natura cujus limitatio est calor videtur esse motus. Hoc autem maxime ostenditur in flamma, quae perpetuo movetur; et in liquoribus ferventibus aut bullientibus, qui etiam perpetuo moventur. Atque ostenditur etiam in incitatione sive incremento caloris facto per motum; ut in follibus, et ventis; de quo vide Instant. 29. Tab. 3. Atque similiter in aliis modis motus, de quibus vide Instant. 28. et 31. Tab. 3. Rursus ostenditur in extinctione ignis et caloris per omnem fortem compressionem, quae fraenat et cessare facit motum; de qua vide Instant. 30. et 32. Tab. 3. Ostenditur etiam in hoc, quod omne corpus destruitur aut saltem insigniter alteratur ab omni igne et calore forti ac vehementi; unde liquido constat, fieri a calore tumultum et perturbationem et motum acrem in partibus internis corporis, qui sensim vergit ad dissolutionem.

Intelligatur hoc quod diximus de motu (nempe, ut sit instar generis ad calorem), non quod calor generet motum, aut quod motus generet calorem (licet et haec in aliquibus vera sint), sed quod ipsissimus calor, sive quid ipsum caloris, sit motus

et nihil aliud; limitatus tamen per differentias quas mox subjungemus, postquam nonnullas cautiones adjecerimus ad evitandum aequivocum.
Calidum ad sensum res respectiva est, et in ordine ad hominem non ad universum; et ponitur recte ut effectus caloris tantum in spiritum animalem. Quin etiam in seipso res varia est, cum idem corpus (prout sensus praedisponitur) inducat perceptionem tam calidi quam frigidi; ut patet per Instant. 41. Tab. 3.
Neque vero communicatio caloris, sive natura ejus transitiva per quam corpus admotum corpori calido incalescit, confundi debet cum forma calidi. Aliud enim est calidum, aliud calefactivum. Nam per motum attritionis inducitur calor absque aliquo calido praecedente, unde excluditur calefactivum a forma calidi. Atque etiam ubi calidum efficitur per approximationem calidi, hoc ipsum non fit ex forma calidi, sed omnino pendet a natura altiore et magis communi; *viz.* ex natura assimilationis sive multiplicationis sui; de qua facienda est separatim inquisitio.
At notio ignis plebeia est, et nihil valet: composita enim est ex concursu qui fit calidi et lucidi in aliquo corpore; ut in flamma communi, et corporibus accensis usque ad ruborem.
Remoto itaque omni aequivoco, veniendum jam tandem est ad differentias veras, quae limitant motum et constituunt eum in formam calidi.

Prima igitur differentia ea est, quod calor sit motus expansivus, per quem corpus nititur ad dilatationem sui, et recipiendi se in majorem sphaeram sive dimensionem quam prius occupaverat. Haec autem differentia maxime ostenditur in flamma; ubi fumus sive halitus pinguis manifesto dilatatur et aperit se in flammam.
Ostenditur etiam in omni liquore fervente, qui manifesto intumescit, insurgit, et emittit bullas; atque urget processum expandendi se, donec vertatur in corpus longe magis extensum et dilatatum quam sit ipse liquor; *viz.* in vaporem aut fumum aut aerem.
Ostenditur etiam in omni ligno et combustibili; ubi fit aliquando exudatio, at semper evaporatio.

Ostenditur etiam in colliquatione metallorum, quae (cum sint corporis compactissimi) non facile intumescunt et se dilatant; sed tamen spiritus eorum, postquam fuerit in se dilatatus, et majorem adeo dilatationem concupierit, trudit plane et agit partes crassiores in liquidum. Quod si etiam calor fortius intendatur, solvit et vertit multum ex iis in volatile.

Ostenditur etiam in ferro aut lapidibus; quae licet non liquefiant aut fundantur, tamen emolliuntur. Quod etiam fit in baculis ligni; quae calefacta paululum in cineribus calidis fiunt flexibilia.

Optime autem cernitur iste motus in aere, qui per exiguum calorem se dilatat continuo et manifesto; ut per Instant. 38. Tab. 3.

Ostenditur etiam in natura contraria frigidi. Frigus enim omne corpus contrahit et cogit in angustius; adeo ut per intensa frigora clavi excidant ex parietibus, aera dissiliant, vitrum etiam calefactum et subito positum in frigido dissiliat et frangatur. Similiter aer per levem infrigidationem recipit se in angustius; ut per Instant. 38. Tab. 3. Verum de his fusius dicetur in inquisitione de Frigido.

Neque mirum est si calidum et frigidum edant complures actiones communes (de quo vide Instant. 32. Tab. 2), cum inveniantur duae ex sequentibus differentiis (de quibus mox dicemus) quae competunt utrique naturae; licet in hac differentia (de qua nunc loquimur) actiones sint ex diametro oppositae. Calidum enim dat motum expansivum et dilatantem, Frigidum autem dat motum contractivum et coeuntem.

Secunda differentia est modificatio prioris; haec videlicet, quod calor sit motus expansivus sive versus circumferentiam; hac lege tamen, ut una feratur corpus sursum. Dubium enim non est quin sint motus complures mixti. Exempli gratia; sagitta aut spiculum simul et progrediendo rotat, et rotando progreditur. Similiter et motus caloris simul est et expansivus et latio in sursum.

Haec vero differentia ostenditur in forcipe, aut bacillo ferreo immisso in ignem: quia si immittatur perpendiculariter tenendo manum superius, cito manum adurit; sin ex latere aut inferius, omnino tardius.

Conspicua etiam est in distillationibus per descensorium; quibus utuntur homines ad flores delicatiores, quorum odores facile evanescunt. Nam hoc

reperit industria, ut collocent ignem non subter sed supra, ut adurat minus. Neque enim flamma tantum vergit sursum, sed etiam omne calidum.
Fiat autem experimentum hujus rei in contraria natura frigidi: *viz.* utrum frigus non contrahat corpus descendendo deorsum, quemadmodum calidum dilatat corpus ascendendo sursum. Itaque adhibeantur duo bacilla ferrea, vel duo tubi vitrei, quoad caetera pares, et calefiant nonnihil; et ponatur spongia cum aqua frigida, vel nix, subter unam, et similiter super alteram. Existimamus enim celeriorem fore refrigerationem ad extremitates in eo bacillo ubi nix ponitur supra quam in eo ubi nix ponitur subter: contra ac fit in calido.

Tertia differentia ea est; ut calor sit motus, non expansivus uniformiter secundum totum, sed expansivus per particulas minores corporis; et simul cohibitus et repulsus et reverberatus, adeo ut induat motum alternativum et perpetuo trepidantem et tentantem et nitentem et ex repercussione irritatum; unde furor ille ignis et caloris ortum habet.
Ista vero differentia ostenditur maxime in flamma et liquoribus bullientibus; quae perpetuo trepidant, et in parvis portionibus tument, et rursus subsidunt.
Ostenditur etiam in iis corporibus, quae sunt tam durae compagis ut calefacta ut ignita non intumescant aut dilatentur mole; ut ferrum ignitum, in quo calor est acerrimus.
Ostenditur etiam in hoc, quod per frigidissimas tempestates focus ardeat acerrime.
Ostenditur etiam in hoc, quod cum extenditur aer in vitro calendari absque impedimento aut repulsione, uniformiter scilicet et aequaliter, non percipiatur calor. Etiam in ventis conclusis, licet erumpant vi maxima, tamen non percipitur calor insignis; quia scilicet motus fit secundum totum, absque motu alternante in particulis. Atque ad hoc fiat experimentum, utrum flamma non urat acrius versus latera quam in medio flammae.
Ostenditur etiam in hoc, quod omnis ustio transigatur per minutos poros corporis quod uritur; adeo ut ustio subruat et penetret et fodicet et stimulet, perinde ac si essent infinitae cuspides acus. Itaque ex hoc illud etiam fit, quod omnes aquae

fortes (si proportionatae sint ad corpus in quod agunt) edant opera ignis, ex natura sua corrodente et pungente.
Atque ista differentia (de qua nunc dicimus) communis est cum natura frigidi; in quo cohibetur motus contractivus per renitentiam expandendi; quemadmodum in calido cohibetur motus expansivus per renitentiam contrahendi.
Itaque sive partes corporis penetrent versus interius sive penetrent versus exterius, similis est ratio; licet impar admodum sit fortitudo; quia non habemus hic apud nos in superficie terrae aliquid quod sit impense frigidum. Vide Instant. 27. Tab. 9.

Quarta differentia est modificatio prioris: haec scilicet, quod motus ille stimulationis aut penetrationis debeat esse nonnihil rapidus et minime lentus; atque fiat etiam per particulas, licet minutas; tamen non ad extremam subtilitatem, sed quasi majusculas.
Ostenditur haec differentia in comparatione operum quae edit ignis cum iis quae edit tempus sive aetas. Aetas enim sive tempus arefacit, consumit, subruit, et incinerat, non minus quam ignis; vel potius longe subtilius: sed quia motus ejusmodi est lentus admodum et per particulas valde exiles, non percipitur calor.
Ostenditur etiam in comparatione dissolutionum ferri et auri. Aurum enim dissolvitur absque calore excitato; ferrum autem cum vehementi excitatione caloris, licet simili fere intervallo quoad tempus. Quia scilicet in auro, ingressus aquae separationis est clemens et subtiliter insinuans, et cessio partium auri facilis; at in ferro, ingressus est asper et cum conflictu, et partes ferri habent obstinationem majorem.
Ostenditur etiam aliquatenus in gangraenis nonnullis et mortificationibus carnium; quae non excitant magnum calorem aut dolorem, ob subtilitatem putrefactionis.

Atque haec sit Prima Vindemiatio, sive Interpretatio inchoata de Forma Calidi, facta per Permissionem Intellectus.
Ex Vindemiatione autem ista Prima, forma sive definitio vera caloris (ejus qui est in ordine ad universum, non relativus tantummodo ad sensum) talis est, brevi

verborum complexu: Calor est motus expansivus, cohibitus, et nitens per partes minores. Modificatur autem expansio: ut expandendo in ambitum, nonnihil tamen inclinet versus superiora. Modificatur autem et nixus ille per partes; ut non sit omnino segnis, sed incitatus et cum impetu nonnullo.
Quod vero ad Operativam attinet, eadem res est. Nam designatio est talis: Si in aliquo corpore naturali poteris excitare motum ad se dilatandum aut expandendum; eumque motum ita reprimere et in se vertere, ut dilatatio illa non procedat aequaliter, sed partim obtineat, partim retrudatur; proculdubio generabis calidum: non habita ratione, sive corpus illud sit elementare (ut loquuntur), sive imbutum a coelestibus; sive luminosum, sive opacum; sive tenue, sive densum; sive localiter expansum, sive intra claustra dimensionis primae contentum; sive vergens ad dissolutionem, sive manens in statu; sive animal, sive vegetabile, sive minerale, sive aqua, sive oleum, sive aer, aut aliqua alia substantia quaecunque susceptiva motus praedicti. Calidum autem ad sensum res eadem est; sed cum analogia, qualis competit sensui. Nunc vero ad ulteriora auxilia procedendum est.

XXI.

Post Tabulas comparentiae primae et rejectionem sive exclusivam, nec non vindemiationem primam factam secundum eas, pergendum est ad reliqua auxilia intellectus circa interpretationem naturae et inductionem veram ac perfectam. In quibus proponendis, ubi opus erit tabulis, procedemus super calidum et frigidum; ubi autem opus erit tantum exemplis paucioribus, procedemus per alia omnia: ut nec confundatur inquisitio, et tamen doctrina versetur minus in angusto.
Dicemus itaque primo loco, de Praerogativis Instantiarum: secundo, de Adminiculis Inductionis: tertio, de Rectificatione Inductionis: quarto, de Variatione Inquisitionis pro Natura Subjecti: quinto, de Praerogativis Naturarum quatenus ad inquisitionem, sive de eo quod inquirendum est prius et posterius: sexto, de Terminis Inquisitionis, sive de synopsi omnium naturarum in universo: septimo, de Deductione ad Praxin, sive de eo quod est in ordine ad Hominem: octavo, de Parascevis ad Inquisitionem; postremo autem, de Scala Ascensoria et

octave; de Parasceve ad Inquisitionem: postremo autem, de Scala Ascensoria et Descensoria Axiomatum.

XXII.

Inter Praerogativas Instantiarum, primo proponemus Instantias Solitarias. Eae autem sunt solitariae, quae exhibent naturam de qua fit inquisitio in talibus subjectis, quae nil habent commune cum aliis subjectis, praeter illam ipsam naturam; aut rursus quae non exhibent naturam de qua fit inquisitio in talibus subjectis, quae sunt similia per omnia cum aliis subjectis, praeterquam in illa ipsa natura. Manifestum enim est quod hujusmodi instantiae tollant ambages, atque accelerent et roborent exclusivam; adeo ut paucae ex illis sint instar multarum.

Exempli gratia: si fiat inquisitio de natura Coloris, Instantiae Solitariae sunt prismata, gemmae chrystallinae, quae reddunt colores non solum in se sed exterius supra parietam, item rores, *etc.* Istae enim nil habent commune cum coloribus fixis in floribus, gemmis coloratis, metallis, lignis, etc., praeter ipsum colorem. Unde facile colligitur, quod color nil aliud sit quam modificatio imaginis lucis immissae et receptae: in priore genere, per gradus diversos incidentiae; in posteriore, per texturas et schematismos varios corporis. Istae autem Instantiae sunt Solitariae quatenus ad similitudinem.

Rursus in eadem inquisitione, venae distinctae albi et nigri in marmoribus, et variegationes colorum in floribus ejusdem speciei, sunt Instantiae Solitariae. Album enim et nigrum marmoris, et maculae albi et purpurei in floribus garyophylli, conveniunt fere in omnibus praeter ipsum colorem. Unde facile colligitur, colorem non multum rei habere cum naturis alicujus corporis intrinsecis, sed tantum situm esse in positura partium crassiori et quasi mechanica. Istae autem Instantiae sunt Solitariae, quatenus ad discrepantiam.

Utrunque autem genus Instantias Solitarias appellare consuevimus; aut Ferinas, sumpto vocabulo ab astronomis.

XXIII.

Inter praerogativas instantiarum, ponemus secundo loco Instantias Migrantes. Eae sunt, in quibus natura inquisita migrat ad generationem, cum prius non existeret; aut contra migrat ad corruptionem, cum prius existeret. Itaque in utraque antistrophe, instantiae tales sunt semper geminae; vel potius una instantia in motu sive transitu, producta ad periodum adversam. At hujusmodi instantiae non solum accelerant et roborant exclusivam, sed etiam compellunt affirmativam sive formam ipsam in angustum. Necesse est enim ut forma rei sit quippiam, quod per hujusmodi migrationem indatur, aut contra per hujusmodi migrationem tollatur et destruatur. Atque licet omnis exclusio promoveat affirmativam, tamen hoc magis directe fit in subjecto eodem quam in diversis. Forma autem (ut ex omnibus quae dicta sunt manifesto liquet) prodens se in uno ducit ad omnia. Quo autem simplicior fuerit migratio, eo magis habenda est instantia in pretio. Praeterea Instantiae Migrantes magni sunt usus ad partem operativam; quia cum proponant formam copulatam cum efficiente aut privante, perspicue designant praxin in aliquibus; unde facilis etiam est transitus ad proxima. Subest tamen in illis nonnihil periculi, quod indiget cautione; hoc videlicet, ne formam nimis retrahant ad efficientem, et intellectum perfundant vel saltem perstringant falsa opinione de forma ex intuitu efficientis. Efficiens vero semper ponitur nil aliud esse quam vehiculum sive deferens formae. Verum huic rei, per exclusivam legitime factam, facile adhibetur remedium. Proponendum itaque est jam exemplum instantiae migrantis. Sit natura inquisita Candor sive Albedo: instantia migrans ad generationem est vitrum integrum et vitrum pulverizatum. Similiter, aqua simplex et aqua agitata in spumam. Vitrum enim integrum et aqua simplex diaphana sunt, non alba; at vitrum pulverizatum et aqua in spuma, alba, non diaphana. Itaque quaerendum quid acciderit ex ista migratione vitro aut aquae. Manifestum enim est formam albedinis deferri et invehi per istam contusionem vitri et agitationem aquae. Nihil autem reperitur accessisse, praeter comminutionem partium vitri et aquae, et aeris insertionem. Neque vero parum profectum est ad inveniendam formam albedinis, quod corpora duo per se diaphana, sed secundum magis et minus (aer scilicet et aqua, aut aer et vitrum), simul posita per minutas portiones exhibeant albedinem, per

refractionem inaequalem radiorum lucis.
Verum hac in re proponendum est etiam exemplum periculi et cautionis, de quibus diximus. Nimirum facile hic occurret intellectui ab hujusmodi efficientibus depravato, quod ad formam albedinis aer semper requiratur, aut quod albedo generetur tantum per corpora diaphana; quae omnino falsa sunt, et per multas exclusiones convicta. Quin potius apparebit (misso aere et hujusmodi) corpora omnino aequalia (secundum portiones opticas) dare diaphanum; corpora vero inaequalia per texturam simplicem, dare album; corpora inaequalia secundum texturam compositam, sed ordinatam, dare reliquos colores, praeter nigrum; corpora vero inaequalia per texturam compositam, sed omnino inordinatam et confusam, dare nigrum. Itaque de instantia migrante ad generationem in natura inquisita albedinis, propositum est jam exemplum. Instantia autem migrans ad corruptionem in eadem natura albedinis, est spuma dissoluta, aut nix dissoluta. Exuit enim albedinem et induit diaphanum aqua, postquam fit integrale sine aere.
Neque vero illud ullo modo praetermittendum est, quod sub Instantiis Migrantibus comprehendi debeant non tantum illae quae migrant ad generationem et privationem, sed etiam illae quae migrant ad majorationem et minorationem; cum illae etiam tendant ad inveniendam formam, ut per definitionem formae superius factam et tabulam graduum manifesto liquet. Itaque papyrus, quae sicca cum fuerit alba est, at madefacta (excluso aere et recepta aqua) minus alba est et magis vergit ad diaphanum, similem habet rationem cum instantiis supradictis.

XXIV.

Inter praerogativas instantiarum, tertio loco ponemus Instantias Ostensivas, de quibus in vindemiatione prima de Calido mentionem fecimus; quas etiam Elucescentias, sive Instantias Liberatas et Praedominantes, appellare consuevimus. Eae sunt, quae ostendunt naturam inquisitam nudam et substantivam, atque etiam in exaltatione sua aut summo gradu potentiae suae; emancipatam scilicet, et liberatam ab impedimentis, vel saltem per fortitudinem

suae virtutis dominantem super ipsa, eaque supprimentem et coercentem. Cum enim omne corpus suscipiat multas naturarum formas copulatas et in concreto, fit ut alia aliam retundat, deprimat, frangat, et liget; unde obscurantur formae singulae. Inveniuntur autem subjecta nonnulla in quibus natura inquisita prae aliis est in suo vigore, vel per absentiam impedimenti vel per praedominantiam virtutis. Hujusmodi autem instantiae sunt maxime ostensivae formae. Verum et in his ipsis instantiis adhibenda est cautio, et cohibedus impetus intellectus. Quicquid enim ostentat formam, eamque trudit, ut videatur occurrere intellectui, pro suspecto habendum est, et recurrendum ad exclusivam severam et diligentem.

Exempli gratia; sit natura inquisita Calidum. Instantia Ostensiva motus expansionis, quae (ut superius dictum est) portio est praecipua formae calidi, est vitrum calendare aeris. Etenim flamma, licet manifesto exhibeat expansionem, tamen propter momentaneam extinctionem non ostendit progressum expansionis. Aqua autem fervens, propter facilem transitionem aquae in vaporem et aerem, non tam bene ostendit expansionem aquae in corpore suo. Rursus ferrum ignitum, et similia, tantum abest ut progressum ostendant, ut contra per retusionem et fractionem spiritus per partes compactas et crassas (quae domant et fraenant expansionem) ipsa expansio non sit omnino conspicua ad sensum. At vitrum calendare clare ostendit expansionem in aere, et conspicuam et progredientem et durantem, neque transeuntem.

Rursus, exempli gratia, sit natura inquisita Pondus. Instantia Ostensiva ponderis est argentum vivum. Omnia enim superat pondere magno intervallo, praeter aurum; quod non multo gravius est. At praestantior instantia est ad indicandam formam ponderis argentum vivum quam aurum; quia aurum solidum est et consistens, quod genus referri videtur ad densum; at argentum vivum liquidum est et turgens spiritu, et tamen multis partibus exuperat gravitate diamantem, et ea quae putantur solidissima. Ex quo ostenditur formam gravis sive ponderosi dominari simpliciter in copia materiae, et non in arcta compage.

Inter praerogativas instantiarum ponemus quarto loco Instantias Clandestinas, quas etiam Instantias Crepusculi appellare consuevimus. Eae sunt veluti oppositae instantiis ostensivis. Exhibent enim naturam inquisitam in infirma virtute, et tanquam in incunabulis et rudimentis suis; tentantem et tanquam primo experientem, sed sub contraria natura latentem et subactam. Sunt autem hujusmodi instantiae magni omnino momenti ad inveniendas formas; quia sicut ostensivae ducunt facile ad differentias, ita clandestinae ducunt optime ad genera; id est, ad naturas illas communes, quarum naturae inquisitae nihil aliud sunt quam limitationes.

Exempli gratia; sit natura inquisita Consistens, sive se determinans; cujus contrarium est Liquidum, sive fluens. Instantiae clandestinae sunt illae quae exhibent gradum nonnullum debilem et infimum consistentis in fluido; veluti bulla aquae, quae est tanquam pellicula quaedam consistens et determinata, facta ex corpore aquae. Similiter stillicidia, quae, si adfuerit aqua quae succedat, producunt se in filum admodum tenue, ne discontinuetur aqua; at si non detur talis copia aquae quae succedere possit, cadit aqua in guttis rotundis, quae est figura quae optime aquam sustinet contra discontinuationem. At in ipso temporis articulo, cum desinit filum aquae et incipit descensus in guttis, resilit ipsa aqua sursum ad evitandam discontinuationem. Quin in metallis, quae cum funduntur sunt liquida sed magis tenacia, recipiunt se saepe guttae liquefactae sursum, atque ita haerent. Simile quoddam est instantia speculorum puerilium, quae solent facere pueruli in scirpis ex saliva, ubi cernitur etiam pellicula consistens aquae. At multo melius se ostendit hoc ipsum in altero illo ludicro puerili, quando capiunt aquam, per saponem factam paulo tenaciorem, atque inflant eam per calamum cavum, atque inde formant aquam tanquam in castellum bullarum; quae per interpositionem aeris inducit consistentiam eo usque ut se projici nonnihil patiatur absque discontinuatione. Optime autem cernitur hoc in spuma et nive, quae talem induunt consistentiam ut fere secari possint; cum tamen sint corpora formata ex aere et aqua, quae utraque sunt liquida. Quae omnia non obscure innuunt Liquidum et Consistens esse notiones tantum plebeias, et ad sensum; inesse autem revera omnibus corporibus fugam et evitationem se

discontinuandi; eam vero in corporibus homogeneis (qualia sunt liquida) esse debilem et infirmam, in corporibus vero, quae sunt composita ex heterogeneis, magis esse vividam et fortem; propterea quod admotio heterogenei constringit corpora, at subintratio homogenei solvit et relaxat.
Similiter, exempli gratia; sit natura inquisita Attractio, sive Coitio Corporum. Instantia circa formam ejus ostensiva maxime insignis est magnes. Contraria autem natura attrahenti est non attrahens, licet in substantia simili. Veluti ferrum, quod non attrahit ferrum, quemadmodum nec plumbum plumbum, nec lignum lignum, nec aquam aqua. Instantia autem clandestina est magnes ferro armatus, vel potius ferrum in magnete armato. Nam ita fert natura, ut magnes armatus in distantia aliqua non trahat ferrum fortius quam magnes non armatus. Verum si admoveatur ferrum, ita ut tangat ferrum in magnete armato, tunc magnes armatus longe majus pondus ferri sustinet quam magnes simplex et inermis, propter similitudinem substantiae ferri versus ferrum; quae operatio erat omnino clandestina et latens in ferro, antequam magnes accessisset. Itaque manifestum est formam coitionis esse quippiam quod in magnete sit vividum et robustum, in ferro debile et latens. Itidem notatum est sagittas parvas ligneas absque cuspide ferrea, emissas ex sclopetis grandibus, altius penetrare in materiam ligneam (puta latera navium, ut similia), quam easdem sagittas ferro acuminatas, propter similitudinem substantiae ligni ad lignum, licet hoc ante in ligno latuerit. Itidem, licet aer aerem aut aqua aquam manifesto non trahat in corporibus integris, tamen bulla approximata bullae facilius dissolvit bullam quam si bulla illa altera abesset, ob appetitum coitionis aquae cum aqua et aeris cum aere Atque hujusmodi Instantiae Clandestinae (quae sunt usus nobilissimi, ut dictum est) in portionibus corporum parvis et subtilibus maxime se dant conspiciendas. Quia massae rerum majores sequuntur formas magis catholicas et generales; ut suo loco dicetur.

XXVI.

Inter praerogativas instantiarum ponemus quinto loco Instantias Constitutivas, quas etiam Manipulares appellare consuevimus. Eae sunt quae constituunt unam

quas etiam Manipulares appellare consuevimus. Eae sunt quae constituant aliam speciem naturae inquisitae tanquam Formam Minorem. Cum enim formae legitimae (quae sunt semper convertibiles cum naturis inquisitis) lateant in profundo nec facile inveniantur, postulat res et infirmitas humani intellectus ut formae particulares, quae sunt congregativae Manipulorum quorundam instantiarum (neutiquam vero omnium) in notionem aliquam communem, non negligantur, verum diligentius notentur. Quicquid enim unit naturam, licet modis imperfectis, ad inventionem formarum viam sternit. Itaque instantiae, quae ad hoc utiles sunt non sunt contemnendae potestatis, sed habent nonnullam praerogativam.

Verum in his diligens est adhibenda cautio, ne intellectus humanus, postquam complures ex istis formis particularibus adinvenerit atque inde partitiones sive divisiones naturae inquisitae confecerit, in illis omnino acquiescat, atque ad inventionem legitimam Formae Magnae se non accingat, sed praesupponat naturam velut a radicibus esse multiplicem et divisam, atque ulteriorem naturae unionem, tanquam rem supervacuae subtilitatis et vergentem ad merum abstractum, fastidiat et rejiciat.

Exempli gratia; sit natura inquisita Memoria, sive Excitans et Adjuvans memoriam. Instantiae constitutivae sunt, ordo sive distributio, quae manifesto juvat memoriam; item Loci in memoria artificiali, qui aut possunt esse loci secundum proprium sensum, veluti janua, angulus, fenestra, et similia, aut possunt esse personae familiares et notae, aut possunt esse quidvis ad placitum (modo in ordine certo ponantur), veluti animalia, herbae; etiam verba, literae, characteres, personae historicae, et caetera; licet nonnulla ex his magis apta sint et commoda, alia minus. Hujusmodi autem Loci memoriam insigniter juvant, eamque longe supra vires naturales exaltant. Item carmina facilius haerent et discuntur memoriter quam prosa. Atque ex isto manipulo trium instantiarum, videlicet ordinis, locorum artificialis memoriae, et versuum, constituitur species una auxilii ad Memoriam. Species autem illa Abscissio Infiniti recte vocari possit. Cum enim quis aliquid reminisci aut revocare in memoriam nititur, si nullam praenotionem habeat aut perceptionem ejus quod quaerit, quaerit certe et molitur et hac illac discurrit, tanquam in infinito. Quod si certam aliquam

praenotionem habeat, statim abscinditur infinitum, et fit discursus memoriae magis in vicino. In tribus autem illis instantiis quae superius dictae sunt, praenotio perspicua est et certa. In prima videlicet, debet esse aliquid quod congruat cum ordine; in secunda debet esse imago quae relationem aliquam habeat sive convenientiam ad illa loca certa; in tertia, debent esse verba quae cadant in versum. Atque ita abscinditur infinitum. Aliae autem instantiae dabunt hanc alteram speciem; ut quicquid deducat intellectuale ad feriendum sensum (quae ratio etiam praecipue viget in artificiali memoria) juvet memoriam. Aliae instantiae dabunt hanc alteram speciem; ut quae faciunt impressionem in affectu forti, incutientia scilicet metum, admirationem, pudorem, delectationem, juvent memoriam. Aliae instantiae dabunt hanc alteram speciem; ut quae maxime imprimuntur a mente pura et minus praeoccupata ante vel post, veluti quae discuntur in pueritia aut quae commentamur ante somnum, etiam primae quaeque rerum vices, magis haereant in memoria. Aliae instantiae dabunt hanc alteram speciem; ut multitudo circumstantiarum sive ansarum juvet memoriam, veluti scriptio per partes non continuatas, lectio, sive recitatio voce alta. Aliae denique instantiae dabunt hanc alteram speciem; ut quae expectantur et attentionem excitant melius haereant, quam quae praetervolant. Itaque si scriptum aliquod vicies perlegeris, non tam facile illud memoriter disces quam si illud legas decies, tentando interim illud recitare, et ubi deficit memoria inspiciendo librum. Ita ut sint veluti sex Formae Minores eorum quae juvant Memoriam; videlicet abscissio infiniti; deductio intellectualis ad sensibile; impressio in affectu forti; impressio in mente pura; multitudo ansarum; praeexpectatio.

Similiter, exempli gratia; sit natura inquisita Gustus, sive Gustatio. Instantiae quae sequuntur sunt Constitutivae: videlicet, quod qui non olfaciunt, sed sensu eo a natura destituti sunt, non percipiant aut gustu distinguant cibum rancidum aut putridum, neque similiter alliatum aut rosatum, aut hujusmodi. Rursus, illi, qui per accidens nares habent per descensum rheumatis obstructas, non discernunt aut percipiunt aliquid putridum aut rancidum aut aqua rosacea inspersum. Rursus, qui afficiuntur hujusmodi rheumate, si in ipso momento, cum

aliquid foetidum aut odoratum habent in ore sive palato, emungant fortiter, in ipso instanti manifestam perceptionem habent rancidi vel odorati. Quae instantiae dabunt et constituent hanc speciem, vel partem potius gustus; ut sensus gustationis ex parte nihil aliud sit quam olfactus interior, transiens et descendens a narium meatibus superioribus in os et palatum. At contra, salsum et dulce et acre et acidum et austerum et amarum, et similia, haec (inquam) omnia aeque sentiunt illi in quibus olfactus deest aut obturatur, ac quisquam alius; ut manifestum sit sensum gustus esse compositum quiddam ex olfactu interiori et tactu quodam exquisito; de quo nunc non est dicendi locus.

Similiter, exempli gratia; sit natura inquisita Communicatio Qualitatis absque Commistione Substantiae. Instantia Lucis dabit vel constituet unam speciem communicationis; Calor vero et Magnes alteram. Communicatio enim lucis est tanquam momentanea, et statim perit, amota luce originali. At calidum et virtus magnetica, postquam tramissa fuerint vel potius excitata in alio corpore, haerent et manent ad tempus non parvum, amoto primo movente.

Denique magna est omnino praerogativa instantiarum constitutivarum, ut quae plurimum faciant et ad definitiones (praesertim particulares) et ad divisiones sive partitiones naturarum; de quo non male dixit Plato, Quod habendus sit tanquam pro Deo, qui definire et dividere bene sciat.

XXVII.

Inter praerogativas instantiarum ponemus sexto loco Instantias Conformes, sive Proportionatas; quas etiam Parallelas, sive Similitudines Physicas, appellare consuevimus. Eae vero sunt, quae ostendunt similitudines et conjugationes rerum, non in formis minoribus (quod faciunt instantiae constitutivae) sed plane in concreto. Itaque sunt tanquam primi et infimi gradus ad unionem naturae. Neque constituunt aliquod axioma statim ab initio, sed indicant et observant tantum quendam consensum corporum. Attamen licet non multum promoveant ad inveniendas formas, nihilominus magna cum utilitate revelant partium universi fabricam, et in membris ejus exercent veluti anatomiam quandam; atque proinde veluti manu ducunt interdum ad axiomata sublimia et nobilia, praesertim

proinde veluti manu ducunt interdum ad axiomata sublimia et nobilia, praesertim illa quae ad mundi configurationem pertinent, potius quam ad naturas et formas simplices.

Exempli gratia; Instantiae Conformes sunt quae sequuntur: speculum, et oculus; et similiter fabrica auris, et loca reddentia echo. Ex qua conformitate, praeter ipsam observationem similitudinis, quae ad multa utilis est, proclive est insuper colligere et formare illud axioma; videlicet, organa sensuum et corpora quae pariunt reflexiones ad sensus esse similis naturae. Rursus ex hoc ipso admonitus intellectus non aegre insurgit ad axioma quoddam altius et nobilius. Hoc nimirum; nihil interesse inter consensus sive sympathias corporum sensu praeditorum, et inanimatorum sine sensu, nisi quod in illis accedat spiritus animalis ad corpus ita dispositum, in his autem absit. Adeo ut quot sint consensus in corporibus inanimatis, tot possint esse sensus in animalibus, si essent perforationes in corpore animato ad discursum spiritus animalis in membrum rite dispositum, tanquam in organum idoneum. Et rursus, quot sint sensus in animalibus, tot sint proculdubio motus in corpore inanimato ubi spiritus animalis abfuerit; licet necesse sit multo plures esse motus in corporibus inanimatis quam sensus in animatis, propter paucitatem organorum sensus. Atque hujus rei ostendit se exemplum valde manifestum in doloribus. Etenim quum sint plura genera doloris in animalibus, et tanquam varii illius characteres (veluti alius est dolor ustionis, alius frigoris intensi, alius puncturae, alius compressionis, alius extensionis, et similium), certissimum est omnia illa, quoad motum, inesse corporibus inanimatis; veluti ligno aut lapidi, cum uritur, aut per gelu constringitur, aut pungitur, aut scinditur, aut flectitur, aut tunditur, et sic de aliis; licet non subintrent sensus, propter absentiam spiritus animalis.

Item instantiae conformes (quod mirum fortasse dictu) sunt radices et rami plantarum. Omne enim vegetabile intumescit, et extrudit partes in circumferentiam, tam sursum quam deorsum. Neque alia est differentia radicum et ramorum, quam quod radix includatur in terra, et rami exponantur aeri et soli. Si quis enim accipiat ramum tenerum et vegetum arboris, atque illum reflectat in aliquam terrae particulam, licet non cohaereat ipsi solo, gignit statim non ramum, sed radicem. Atque vice versa, si terra ponatur superius, atque ita

ramum, sed radicem. Atque vice versa, si terra ponatur superius, atque ita obstruatur lapide aut aliqua dura substantia, ut planta cohibeatur nec possit frondescere sursum, edet ramos in aerem deorsum.
Item instantiae conformes sunt gummi arborum, et pleraeque gemmae rupium. Utraque enim nil aliud sunt quam exudationes et percolationes succorum: in primo genere scilicet, succorum ex arboribus; in secundo, ex saxis; unde gignitur claritudo et splendor in utrisque, per percolationem nimirum tenuem et accuratam. Nam inde fit etiam, quod pili animalium non sint tam pulchri et tam vividi coloris quam avium plumae complures: quia succi non tam delicate percolantur per cutem quam per calamum.
Item instantiae conformes sunt scrotum in animalibus masculis, et matrix in femellis. Adeo ut nobilis illa fabrica per quam sexus differunt (quatenus ad animalia terrestria), nil aliud videatur esse, quam secundum exterius et interius; vi scilicet majore caloris genitalia in sexu masculo protrudente in exterius, ubi in femellis nimis debilis est calor quam ut hoc facere possit; unde accidit quod contineantur interius.
Item instantiae conformes sunt pinnae piscium, et pedes quadrupedum, aut pedes et alae volucrum; quibus addidit Aristoteles quatuor volumina in motu serpentum. Adeo ut in fabrica universi motus viventium plerunque videatur expediri per quaterniones artuum sive flexionum.
Item dentes in animalibus terrestribus, et rostra in avibus, sunt instantiae conformes; unde manifestum est, in omnibus animalibus perfectis fluere duram quandam substantiam versus os.
Item non absurda est similitudo et conformitas illa, ut homo sit tanquam planta inversa. Nam radix nervorum et facultatum animalium est caput; partes autem seminales sunt infirmae, non computatis extremitatibus tibiarum et brachiorum. At in planta, radix (quae instar capitis est) regulariter infimo loco collocatur; semina autem supremo.
Denique illud omnino praecipiendum est et saepius monendum; ut diligentia hominum in inquisitione et congerie Naturalis Historiae deinceps mutetur plane, et vertatur in contrarium ejus quod nunc in usu est. Magna enim hucusque atque adeo curiosa fuit hominum industria in notanda rerum varietate atque explicandis

adeo curiosa fuit hominum industria in notanda rerum varietate atque explicandis accuratis animalium, herbarum, et fossilium differentiis; quarum pleraeque magis sunt lusus naturae quam seriae alicujus utilitatis versus scientias. Faciunt certe hujusmodi res ad delectationem, atque etiam quandoque ad praxin; verum ad introspiciendam naturam parum aut nihil. Itaque convertenda plane est opera ad inquirendas et notandas rerum similitudines et analoga, tam in integralibus quam partibus. Illae enim sunt quae naturam uniunt, et constituere scientias incipiunt.

Verum in his omnino est adhibenda cautio gravis et severa; ut accipiantur pro instantiis conformibus et proportionatis illae, quae denotant similitudines (ut ab initio diximus) physicas; id est, reales et substantiales et immersas in natura, non fortuitas et ad speciem; multo minus superstitiosas aut curiosas, quales naturalis magiae scriptores (homines levissimi, et in rebus tam seriis quales nunc agimus vix nominandi) ubique ostentant; magna cum vanitate et desipientia, inanes similitudines et sympathias rerum describentes atque etiam quandoque affingentes.

Verum his missis, etiam in ipsa configuratione mundi in majoribus non sunt negligendae instantiae conformes; veluti Africa, et regio Peruviana cum continente se porrigente usque ad Fretum Magellanicum. Utraque enim regio habet similes isthmos et similia promontoria, quod non temere accidit.

Item Novus et Vetus Orbis; in eo quod utrique orbes versus septentriones lati sunt et exporrecti, versus austrum autem angusti et acuminati.

Item instantiae conformes nobilissimae sunt frigora intensa in media (quam vocant) aeris regione, et ignes acerrimi qui saepe reperiuntur erumpentes ex locis subterraneis; quae duae res sunt ultimitates et extrema; naturae scilicet frigidi versus ambitum coeli, et naturae calidi versus viscera terrae; per antiperistasin, sive rejectionem naturae contrariae.

Postremo autem in axiomatibus scientiarum notatu digna est conformitas instantiarum. Veluti tropus rhetoricae, qui dicitur Praeter Expectatum, conformis est tropo musicae, qui vocatur Declinatio Cadentiae. Similiter, postulatum mathematicum, ut quae eidem tertio aequalia sunt etiam inter se sint aequalia, conforme est cum fabrica syllogismi in logica, qui unit ea quae conveniunt in

conforme est cum fabrica syllogismi in logica, qui unit ea quae conveniunt in medio. Denique multum utilis est in quamplurimis sagacitas quaedam in conquirendis et indagandis conformitatibus et similitudinibus physicis.

XXVIII.

Inter praerogativas instantiarum, ponemus septimo loco Instantias Monodicas; quas etiam Irregulares sive Heteroclitas (sumpto vocabulo a grammaticis) appellare consuevimus. Eae sunt, quae ostendunt corpora in concreto, quae videntur esse extravagantia et quasi abrupta in natura, et minime convenire cum aliis rebus ejusdem generis. Etenim instantiae conformes sunt similes alterius, at instantiae monodicae sunt sui similes. Usus vero instantiarum monodicarum est talis qualis est instantiarum clandestinarum: *viz.* ad evehendam et uniendam naturam ad invenienda genera sive communes naturas, limitandas postea per differentias veras. Neque enim desistendum ab inquisitione donec proprietates et qualitates, quae inveniuntur in hujusmodi rebus quae possunt censeri pro miraculis naturae, reducantur et comprehendantur sub aliqua forma sive lege certa: ut irregularitas sive singularitas omnis reperiatur pendere ab aliqua forma communi; miraculum vero illud sit tandem solummodo in differentiis accuratis et gradu et concursu raro, et non in ipsa specie: ubi nunc contemplationes hominum non procedant ultra quam ut ponant hujusmodi res pro secretis et magnalibus naturae, et tanquam incausabilibus, et pro exceptionibus regularum generalium.

Exempla instantiarum monodicarum sunt, sol et luna, inter astra; magnes, inter lapides; argentum vivum, inter metalla; elephas, inter quadrupedes; sensus veneris, inter genera tactus; odor venaticus in canibus, inter genera olfactus. Etiam S litera apud grammaticos, habetur pro monodica; ob facilem compositionem quam sustinet cum consonantibus, aliquando duplicibus, aliquando triplicibus; quod nulla alia litera facit. Plurimi autem faciendae sunt hujusmodi instantiae; quia acuunt et vivificant inquisitionem, et medentur intellectui depravato a consuetudine et ab iis quae fiunt plerunque.

XXIX

XXIX.

Inter praerogativas instantiarum, ponemus loco octavo Instantias Deviantes; errores scilicet naturae, et vaga, ac monstra: ubi natura declinat et deflectit a cursu ordinario. Differunt enim errores naturae ab instantiis monodicis in hoc; quod monodicae sint miracula specierum, at errores sint miracula individuorum. Similis autem fere sunt usus; quia rectificant intellectum adversus consueta, et revelant formas communes. Neque enim in his etiam desistendum ab inquisitione donec inveniatur causa hujusmodi declinationis. Veruntamen causa illa non exurgit ad formam aliquam proprie, sed tantum ad latentem processum ad formam. Qui enim vias naturae noverit, is deviationes etiam facilius observabit. At rursus, qui deviationes noverit, is accuratius vias describet. Atque in illo differunt etiam ab instantiis monodicis, quod multo magis instruant praxin et operativam. Nam novas species generare arduum admodum foret; at species notas variare, et inde rara multa ac inusitata producere, minus arduum. Facilis autem transitus est a miraculis naturae ad miracula artis. Si enim deprehendatur semel natura in variatione sua, ejusque ratio manifesta fuerit, expeditum erit eo deducere naturam per artem quo per casum aberraverit. Neque solum eo, sed et aliorsum; cum errores ex una parte monstrent et aperiant viam ad errores et deflexiones undequaque. Hic vero exemplis non est opus, propter eorundem copiam. Facienda enim est congeries sive historia naturalis particularis omnium monstrorum et partuum naturae prodigiosorum; omnis denique novitatis et raritatis et inconsueti in natura. Hoc vero faciendum est cum severissimo delectu, ut constet fides. Maxime autem habenda sunt pro suspectis quae pendent quomodocunque a religione, ut prodigia Livii: nec minus, quae inveniuntur in scriptoribus magiae naturalis, aut etiam alchymiae, et hujusmodi hominibus; qui tanquam proci sunt et amatores fabularum. Sed depromenda sunt illa ex gravi et fida historia, et auditionibus certis.

XXX.

Inter praerogativas instantiarum, ponemus loco nono Instantias Limitaneas; quas etiam Participia vocare consuevimus. Eae vero sunt, quae exhibent species

etiam Participia vocare consuevimus. Eae vero sunt, quae exhibent species corporum tales, quae videntur esse compositae ex speciebus duabus, vel rudimenta inter speciem unam et alteram. Hae vero instantiae inter instantias monodicas sive heteroclitas recte numerari possunt: sunt enim in universitate rerum rarae et extraordinariae. Sed tamen ob dignitatem seorsim tractandae et ponendae sunt; optime enim indicant compositionem et fabricam rerum, et innuunt causas numeri et qualitatis specierum ordinariarum in universo, et deducunt intellectum ab eo quod est, ad id quod esse potest.
Harum exempla sunt: muscus, inter putredinem et plantam; cometae nonnulli, inter stellas et meteora ignita; pisces volantes, inter aves et pisces; vespertiliones, inter aves et quadrupedes; etiam

‘Simia quam similis turpissima bestia nobis;’

et partus animalium biformes et commisti ex speciebus diversis; et similia.

XXXI.

Inter praerogativas instantiarum ponemus decimo loco Instantias Potestatis, sive Fascium (sumpto vocabulo ab insignibus imperii), quas etiam Ingenia, sive Manus Hominis appellare consuevimus. Eae sunt opera maxime nobilia et perfecta, et tanquam ultima in unaquaque arte. Cum enim hoc agatur praecipue ut natura pareat rebus et commodis humanis; consentaneum est prorsus, ut opera, quae jampridem in potestate hominis fuerunt (quasi provinciae antea occupatae et subactae), notentur et numerentur; praesertim ea quae sunt maxime enucleata et perfecta: propterea quod ab istis proclivior et magis in propinquo sit transitus ad nova et hactenus non inventa. Si quis enim ab horum contemplatione attenta propositum acriter et strenue urgere velit, fiet certe ut aut producat illa paulo longius, aut deflectat illa ad aliquid quod finitimum est, aut etiam applicet et transferat illa ad usum aliquem nobiliorem.
Neque hic finis. Verum quemadmodum ab operibus naturae raris et inconsuetis erigitur intellectus et elevatur ad inquirendas et inveniendas formas, quae etiam illorum sunt capaces, ita etiam in operibus artis egregiis et admirandis hoc usu-

venit; idque multo magis; quia modus efficiendi et operandi hujusmodi miracula artis manifestus ut plurimum est, cum plerunque in miraculis naturae sit magis obscurus. Attamen in his ipsis cautio est adhibenda vel maxime, ne deprimant scilicet intellectum et eum quasi humo affigant.

Periculum enim est, ne per hujusmodi opera artis, quae videntur velut summitates quaedam et fastigia industriae humanae, reddatur intellectus attonitus et ligatus et quasi maleficiatus quoad illa, ita ut cum aliis consuescere non possit, sed cogitet nihil ejus generis fieri posse nisi eadem via qua illa effecta sunt, accedente tantummode diligentia majore et praeparatione magis accurata.

Contra, illud ponendum est pro certo: vias et modos efficiendi res et opera, quae adhuc reperta sunt et notata, res esse plerunque pauperculas; atque omnem potentiam majorem pendere et ordine derivari a fontibus formarum, quarum nulla adhuc inventa est.

Itaque (ut alibi diximus) qui de machinis et arietibus, quales erant apud veteres, cogitasset, licet hoc fecisset obnixe atque aetatem in eo consumpsisset, nunquam tamen incidisset in inventum tormentorum igneorum operantium per pulverem pyrium. Neque rursus, qui in lanificiis et serico vegetabili observationem suam et meditationem collocasset, unquam per ea reperisset naturam vermis aut serici bombycini.

Quocirca omnia inventa, quae censeri possunt magis nobilia (si animum advertas), in lucem prodiere, nullo modo per pusillas enucleationes et extensiones artium, sed omnino per casum. Nihil autem repraesentat aut anticipat casum (cujus mos est ut tantum per longa saecula operetur), praeter inventionem formarum.

Exempla autem hujusmodi instantiarum particularia nihil opus est adducere, propter copiam eorundem. Nam hoc omnino agendum; ut visitentur et penitus introspiciantur omnes artes mechanicae, atque liberales etiam (quatenus ad opera), atque inde facienda est congeries sive historia particularis, tanquam magnalium et operum magistralium et maxime perfectorum in unaquaque ipsarum, una cum modis effectionis sive operationis.

Neque tamen astringimus diligentiam, quae adhibenda est in hujusmodi collecta

Neque tamen astringimus diligentiam, quae adhibenda est in hujusmodi collecta, ad ea quae censentur pro magisteriis et arcanis alicujus artis tantum, atque movent admirationem. Admiratio enim proles est raritatis; siquidem rara, licet in genere sint ex vulgatis naturis, tamen admirationem pariunt.

At contra, quae revera admirationi esse debent propter discrepantiam quae inest illis in specie collatis ad alias species, tamen si in usu familiari praesto sint leviter notantur. Debent autem notari monodica artis, non minus quam monodica naturae; de quibus antea diximus. Atque quemadmodum in monodicis naturae posuimus solem, lunam, magnetem, et similia, quae re vulgatissima sunt sed natura tamen fere singulari: idem et de monodicis artis faciendum est.

Exempli gratia; instantia monodica artis est papyrus; res admodum vulgata. At si diligenter animum advertas, materiae artificiales aut plane textiles sunt per fila directa et transversa; qualia sunt pannus sericus, aut laneus, et linteus, et hujusmodi: aut coagmentantur ex succis concretis; qualia sunt later, aut argilla figularis, aut vitrum, aut esmalta, aut porcellana, et similia; quae si bene uniantur splendent, sin minus, indurantur certe, sed non splendent. Attamen omnia talia, quae fiunt ex succis concretis, sunt fragilia, nec ullo modo haerentia et tenacia. At contra, papyrus est corpus tenax, quod scindi et lacerari possit; ita ut imitetur et fere aemuletur pellem sive membranam alicujus animalis, aut folium alicujus vegetabilis, et hujusmodi opificia naturae. Nam neque fragilis est, ut vitrum; neque textilis, ut pannus; sed habet fibras certe, non fila distincta, omnino ad modum materiarum naturalium: ut inter artificiales materias vix inveniatur simile aliquod, sed sit plane monodicum. Atque praeferenda sane sunt in artificialibus ea quae maxime accedunt ad imitationem naturae, aut e contrario eam potenter regunt et invertunt.

Rursus, inter ingenia et manus hominis, non prorsus contemnenda sunt praestigiae et jocularia. Nonnulla enim ex istis, licet sint usu levia et ludicra, tamen informatione valida esse possunt.

Postremo, neque omnino omittenda sunt superstitiosa, et (prout vocabulum sensu vulgari accipitur) magica. Licet enim hujusmodi res sint in immensum obrutae grandi mole mendaciorum et fabularum, tamen inspiciendum paulisper si forte subsit et lateat in aliquibus earum aliqua operatio naturalis; ut in fascino, et

subsit et lateat in aliquibus earum aliqua operatio naturalis, ut in fascino, et fortificatione imaginationis, et consensu rerum ad distans, et transmissione impressionum a spiritu ad spiritum non minus quam a corpore ad corpus, et similibus.

XXXII.

Ex iis, quae ante dicta sunt, patet quod quinque illa instantiarum genera de quibus diximus (viz. instantiarum conformium, instantiarum monodicarum, instantiarum deviantium, instantiarum limitanearum, instantiarum potestatis) non debeant reservari, donec inquiratur natura aliqua certa (quemadmodum instantiae reliquae, quas primo loco proposuimus, nec non plurimae ex iis quae sequentur, reservari debent); sed statim jam ab initio facienda est earum collectio, tanquam historia quaedam particularis; eo quod digerant ea quae ingrediuntur intellectum, et corrigant pravam complexionem intellectus ipsius, quem omnino necesse est imbui et infici et demum perverti ac distorqueri ab incursibus quotidianis et consuetis.

Itaque adhibendae sunt eae instantiae tanquam praeparativum aliquod, ad rectificandum et expurgandum intellectum. Quicquid enim abducit intellectum a consuetis, aequat et complanat aream ejus ad recipiendum lumen siccum et purum notionum verarum.

Quin etiam hujusmodi instantiae sternunt et praestruunt viam ad operativam; ut suo loco dicemus, quando de Deductionibus ad Praxin sermo erit.

XXXIII.

Inter praerogativas instantiarum ponemus loco undecimo Instantias Comitatus, atque Hostiles; quas etiam Instantias Propositionum Fixarum appellare consuevimus. Eae sunt instantiae, quae exhibent aliquod corpus sive concretum tale, in quo natura inquisita perpetuo sequatur tanquam comes quidam individuus: aut contra, in quo natura inquisita perpetuo fugiat atque ex comitatu excludatur, ut hostis et inimicus. Nam ex hujusmodi instantiis formantur

propositiones certae et universales, aut affirmativae aut negativae; in quibus subjectum erit tale corpus in concreto, praedicatum vero natura ipsa inquisita. Etenim propositiones particulares omnino fixae non sunt, ubi scilicet natura inquisita reperitur in aliquo concreto fluxa et mobilis, *viz.* accedens sive acquisita, aut rursus recedens sive deposita. Quocirca particulares propositiones non habent praerogativam aliquam majorem, nisi tantum in casu migrationis; de quo antea dictum est. Et nihilominus, etiam particulares illae propositiones comparatae et collatae cum universalibus multum juvant; ut suo loco dicetur. Neque tamen, etiam in universalibus istis propositionibus exactam aut absolutam affirmationem vel abnegationem requirimus. Sufficit enim ad id quod agitur, etiamsi exceptionem nonnullam singularem aut raram patiantur.

Usus autem instantiarum comitatus est ad angustiandam affirmativam formae. Quemadmodum enim in instantiis migrantibus angustiatur affirmativa formae; *viz.* ut necessario poni debeat forma rei esse aliquid quod per actum illum migrationis inditur aut destruitur; ita etiam in instantiis comitatus angustiatur affirmativa formae; ut necessario poni debeat forma rei esse aliquid quod talem concretionem corporis subingrediatur, aut contra ab eadem abhorreat; ut qui bene norit constitutionem aut schematismum hujusmodi corporis non longe abfuerit ab extrahenda in lucem forma naturae inquisitae.

Exempli gratia; sit natura inquisita Calidum. Instantia comitatus est flamma. Etenim in aqua, aere, lapide, metallo, et aliis quamplurimis, calor est mobilis, et accedere potest et recedere: at omnis flamma est calida, ita ut calor in concretione flammae perpetuo sequatur. At instantia hostilis calidi nulla reperitur apud nos. Nam de visceribus terrae nihil constat ad sensum; sed eorum corporum quae nobis nota sunt nulla prorsus est concretio quae non est susceptibilis caloris.

At rursus, sit natura inquisita Consistens. Instantia hostilis est aer. Etenim metallum potest fluere, potest consistere; similiter vitrum; etiam aqua potest consistere, cum conglaciatur: at impossibile est ut aer unquam consistat, aut exuat fluorem.

Verum de instantiis hujusmodi propositionum fixarum supersunt duo monita,

quae utilia sunt ad id quod agitur. Primum, ut si defuerit plane universalis affirmativa aut negativa, illud ipsum diligenter notetur tanquam non-ens; sicut fecimus de calido, ubi universalis negativa (quatenus ad entia quae ad nostram notitiam pervenerint) in rerum natura deest. Similiter, si natura inquisita sit aeternum aut incorruptibile, deest affirmativa universalis hic apud nos. Neque enim praedicari potest Aeternum aut Incorruptibile de aliquo corpore eorum quae infra coelestia sunt, aut supra interiora terrae. Alterum monitum est, ut propositionibus universalibus, tam affirmativis quam negativis, de aliquo concreto, subjungantur simul ea concreta quae proxime videntur accedere ad id quod est ex non-entibus: ut in calore, flammae mollissimae et minimum adurentes; in incorruptibili, aurum, quod proxime accedit. Omnia enim ista indicant terminos naturae inter ens et non-ens; et faciunt ad circumscriptiones formarum, ne gliscant et vagentur extra conditiones materiae.

XXXIV.

Inter praerogativas instantiarum, ponemus loco duodecimo ipsas illas Instantias Subjunctivas, de quibus in superiori aphorismo diximus: quas etiam Instantias Ultimitatis sive Termini appellare consuevimus. Neque enim hujusmodi instantiae utiles sunt tantum, quatenus subjunguntur propositionibus fixis; verum etiam per se, et in proprietate sua. Indicant enim non obscure veras sectiones naturae, et mensuras rerum, et illud Quousque natura quid faciat et ferat, et deinde transitus naturae ad aliud. Talia sunt, aurum, in pondere; ferrum, in duritie; cete, in quantitate animalium; canis, in odore; inflammatio pulveris pyrii, in expansione celeri; et alia id genus. Nec minus exhibenda sunt ea quae sunt ultima gradu infimo, quam quae supremo; ut spiritus vini, in pondere; sericum, in mollitie; vermiculi cutis, in quantitate animalium; et caetera.

XXXV.

Inter praerogativas instantiarum, ponemus loco decimo tertio Instantias Foederis sive Unionis. Eae sunt, quae confundunt et adunant naturas, quae existimantur

esse heterogeneae, et pro talibus notantur et signantur per divisiones receptas. At instantiae foederis ostendunt operationes et effectus, quae deputantur alicui ex illis heterogeneis ut propria, competere etiam aliis ex heterogeneis; ut convincatur ista heterogenia (quae in opinione est) vera non esse aut essentialis, sed nil aliud esse quam modificatio naturae communis. Optimi itaque sunt usus ad elevandum et evehendum intellectum a differentiis ad genera; et ad tollendum larvas et simulachra rerum, prout occurrunt et prodeunt personatae in substantiis concretis.

Exempli gratia: sit natura inquisita Calidum. Omnino videtur esse divisio solennis et authentica, quod sint tria genera caloris; *viz.* calor coelestium, calor animalium, et calor ignis; quodque isti calores (praesertim unus ex illis comparatus ad reliquos duos) sint ipsa essentia et specie, sive natura specifica, differentes et plane heterogenei: quandoquidem calor coelestium et animalium generet et foveat, at calor ignis contra corrumpat et destruat. Est itaque instantia foederis experimentum illud satis vulgatum, cum recipitur ramus aliquis vitis intra domum ubi sit focus assiduus, ex quo maturescunt uvae etiam mense integro citius quam foras; ita ut maturatio fructus etiam pendentis super arborem fieri possit, scilicet ab igne, cum hoc ipsum videatur esse opus proprium solis. Itaque ab hoc initio facile insurgit intellectus, repudiata heterogenia essentiali, ad inquirendum quae sint differentiae illae quae revera reperiuntur inter calorem solis et ignis, ex quibus fit ut eorum operationes sint tam dissimiles, utcunque illi ipsi participent ex natura communi.

Quae differentiae reperientur quatuor: *viz.* primo, quod calor solis respectu caloris ignis sit gradu longe clementior et lenior; secundo, quod sit (praesertim ut defertur ad nos per aerem) qualitate multo humidior; tertio (quod caput rei est), quod sit summe inaequalis, atque accedens et auctus, et deinceps recedens et diminutus; id quod maxime confert ad generationem corporum. Recte enim asseruit Aristoteles causam principalem generationum et corruptionum, quae fiunt hic apud nos in superficie terrae, esse viam obliquam solis per zodiacum; unde calor solis, partim per vicissitudines diei et noctis, partim per successiones aestatis et hyemis, evadit miris modis inaequalis. Neque tamen desinit ille vir id

quod ab eo recte inventum fuit statim corrumpere et depravare. Nam ut arbiter scilicet naturae (quod illi in more est) valde magistraliter assignat causam generationis accessui solis, causam autem corruptionis recessui; cum utraque res (accessus videlicet solis et recessus) non respective, sed quasi indifferenter, praebeat causam tam generationi quam corruptioni; quandoquidem inaequalitas caloris generationi et corruptioni rerum, aequalitas conservationi tantum ministret. Est et quarta differentia inter calorem solis et ignis, magni prorsus momenti: *viz.* quod sol operationes suas insinuet per longa temporis spatia, ubi operationes ignis (urgente hominum impatientia) per breviora intervalla ad exitum perducantur. Quod si quis id sedulo agat, ut calorem ignis attemperet et reducat ad gradum moderatiorem et leniorem (quod multis modis facile fit), deinde etiam inspergat et admisceat nonnullam humiditatem, maxime autem si imitetur calorem solis in inaequalitate, postremo si moram patienter toleret (non certe eam quae sit proportionata operibus solis, sed largiorem quam homines adhibere solent in operibus ignis), is facile missam faciet heterogeniam illam caloris, et vel tentabit vel exaequabit vel in aliquibus vincet opera solis, per calorem ignis. Similis instantia foederis est resuscitatio papilionum ex frigore stupentium et tanquam emortuarum, per exiguum teporem ignis; ut facile cernas non magis negatum esse igni vivificare animantia quam maturare vegetabilia. Etiam inventum illud celebre Fracastorii de sartagine acriter calefacta, qua circundant medici capita apoplecticorum desperatorum, expandit manifeste spiritus animales ab humoribus et obstructionibus cerebri compressos et quasi extinctos, illosque ad motum excitat, non aliter quam ignis operatur in aquam aut aerem, et tamen per consequens vivificat. Etiam ova aliquando excluduntur per calorem ignis, id quod prorsus imitatur calorem animalem; et complura ejusmodi; ut nemo dubitare possit quin calor ignis in multis subjectis modificari possit ad imaginem caloris coelestium et animalium.

Similiter sint naturae inquisitae Motus et Quies. Videtur esse divisio solennis atque ex intima philosophia, quod corpora naturalia vel rotent, vel ferantur recta, vel stent sive quiescant. Aut enim est motus sine termino, aut statio in termino, aut latio ad terminum. At motus ille perennis rotationis videtur esse coelestium

proprius; statio sive quies videtur competere globo ipsi terrae; at corpora caetera (gravia quae vocant et levia, extra loca scilicet connaturalitatis suae sita) feruntur recta ad massas sive congregationes similium; levia sursum, versus ambitum coeli; gravia deorsum, versus terram. Atque ista pulchra dictu sunt.
At instantia foederis est cometa aliquis humilior; qui cum sit longe infra coelum, tamen rotat. Atque commentum Aristotelis de alligatione sive sequacitate cometae ad astrum aliquod jampridem explosum est; non tantum quia ratio ejus non est probabilis, sed propter experientiam manifestam discursus et irregularis motus cometarum per varia loca coeli.
At rursus alia instantia foederis circa hoc subjectum est motus aeris; qui intra tropicos (ubi circuli rotationis sunt majores) videtur et ipse rotare ab oriente in occidentem.
Et alia rursus instantia foret fluxus et refluxus maris, si modo aquae ipsae deprehendantur ferri motu rotationis (licet tardo et evanido) ab oriente in occidentem; ita tamen ut bis in die repercutiantur. Itaque, si haec ita se habeant, manifestum est motum istum rotationis non terminari in coelestibus, sed communicari aeri et aquae.
Etiam ista proprietas levium, nimirum ut ferantur sursum, vacillat nonnihil. Atque in hoc sumi potest pro instantia foederis bulla aquae. Si enim aer fuerit subter aquam, ascendit rapide versus superficiem aquae, per motum illum plagae (quam vocat Democritus), per quam aqua descendens percutit et attollit aerem sursum; non autem per contentionem aut nixum aeris ipsius. Atqui ubi ad superficiem ipsam aquae ventum fuerit, tum cohibetur aer ab ulteriore ascensu, per levem resistentiam quam reperit in aqua non statim tolerante se discontinuari: ita ut exilis admodum sit appetitus aeris ad superiora.
Similiter sit natura inquisita Pondus. Est plane divisio recepta, ut densa et solida ferantur versus centrum terrae, rara autem et tenuia versus ambitum coeli; tanquam ad loca sua propria. Atque loca quod attinet, (licet in scholis hujusmodi res valeant) plane inepta et puerilis cogitatio est, locum aliquid posse. Itaque nugantur philosophi cum dicant quod, si perforata esset terra, corpora gravia se sisterent quando ventum esset ad centrum. Esset enim certe virtuosum plane et

efficax genus nihili, aut puncti mathematici, quod aut alia afficeret, aut rursus quod alia appeterent: corpus enim non nisi a corpore patitur. Verum iste appetitus ascendendi et descendendi aut est in schematismo corporis quod movetur, aut in sympathia sive consensu cum alio corpore. Quod si inveniatur aliquod corpus densum et solidum, quod nihilominus non feratur ad terram, confunditur hujusmodi divisio. At si recipiatur opinio Gilberti, quod magnetica vis terrae ad alliciendum gravia non extendatur ultra orbem virtutis suae (quae operatur semper ad distantiam certam, et non ultra), hocque per aliquam instantiam verificetur; ea demum erit instantia foederis circa hoc subjectum. Neque tamen occurrit impraesentiarum aliqua instantia super hoc certa et manifesta. Proxime videntur accedere cataractae coeli, quae in navigationibus per Oceanum Atlanticum versus Indias utrasque saepe conspiciuntur. Tanta enim videtur esse vis et moles aquarum quae per hujusmodi cataractas subito effunditur, ut videatur collectio aquarum fuisse ante facta, atque in his locis haesisse et mansisse; et postea potius per causam violentam dejecta et detrusa esse, quam naturali motu gravitatis cecidisse; adeo ut conjici possit, corpoream molem densam atque compactam in magna distantia a terra fore pensilem tanquam terram ipsam, nec casuram nisi dejiciatur. Verum de hoc nil certi affirmamus. Interim in hoc et in multis aliis facile apparebit, quam inopes simus historiae naturalis; cum loco instantiarum certarum nonnunquam suppositiones afferre pro exemplis cogamur.

Similiter sit natura inquisita Discursus Ingenii. Videtur omnino divisio vera, rationis humanae et solertiae brutorum. Attamen sunt nonnullae instantiae actionum quae eduntur a brutis, per quas videntur etiam bruta quasi syllogizare: ut memoriae proditum est de corvo, qui per magnas siccitates fere enectus siti conspexit aquam in trunco cavo arboris; atque cum non daretur ei intrare propter angustias, non cessavit jacere multos lapillos, per quos surgeret et ascenderet aqua ut bibere posset; quod postea cessit in proverbium.

Similiter sit natura inquisita Visibile. Videtur omnino esse divisio vera et certa, lucis, quae est visibile originale et primam copiam facit visui, et coloris, qui est visibile secundarium et sine luce non cernitur, ita ut videatur nil aliud esse quam

imago aut modificatio lucis. Attamen ex utraque parte circa hoc videntur esse instantiae foederis; scilicet, nix in magna quantitate, et flamma sulphuris; in quarum altera videtur esse color primulum lucens, in altera lux vergens ad colorem.

XXXVI.

Inter praerogativas instantiarum, ponemus loco decimo quarto Instantias Crucis; translato vocabulo a Crucibus, quae erectae in biviis indicant et signant viarum separationes. Has etiam Instantias Decisorias et Judiciales, et in casibus nonnullis Instantias Oraculi et Mandati, appellare consuevimus. Earum ratio talis est. Cum in inquisitione naturae alicujus intellectus ponitur tanquam in aequilibrio, ut incertus sit utri naturarum e duabus, vel quandoque pluribus, causa naturae inquisitae attribui aut assignari debeat, propter complurium naturarum concursum frequentem et ordinarium, instantiae crucis ostendunt consortium unius ex naturis (quoad naturam inquisitam) fidum et indissolubile, alterius autem varium et separabile; unde terminatur quaestio, et recipitur natura illa prior pro causa, missa altera et repudiata. Itaque hujusmodi instantiae sunt maximae lucis, et quasi magnae authoritatis; ita ut curriculum interpretationis quandoque in illas desinat, et per illas perficiatur. Interdum autem Instantiae Crucis illae occurrunt et inveniuntur inter jampridem notatas; at ut plurimum novae sunt, et de industria atque ex composito quaesitae et applicatae, et diligentia sedula et acri tandem erutae.

1. Exempli gratia; sit natura inquisita Fluxus et Refluxus Maris, ille bis repetitus in die atque sexhorarius in accessibus et recessibus singulis, cum differentia nonnulla quae coincidit in motum lunae. Bivium circa hanc naturam tale est. Necesse prorsus est ut iste motus efficiatur, vel ab aquarum progressu et regressu, in modum aquae in pelvi agitatae, quae quando latus unum pelvis alluit, deserit alterum; vel a sublatione et subsidentia aquarum e profundo, in modum aquae ebullientis et rursus subsidentis. Utri vero causae fluxus et refluxus ille assignari debeat, oritur dubitatio. Quod si recipiatur prior assertio,

necesse est ut cum sit fluxus in mari ex una parte, fiat sub idem tempus alicubi in mari refluxus ex alia. Itaque ad hoc reducitur inquisitio. Atqui observavit Acosta, cum aliis nonnullis (diligenti facta inquisitione), quod ad litora Floridae et ad litora adversa Hispaniae et Africae, fiant fluxus maris ad eadem tempora, et refluxus itidem ad eadem tempora; non contra, quod cum fluxus fit ad littora Floridae, fiat refluxus ad littora Hispaniae et Africae. Attamen adhuc diligentius attendenti, non per hoc evincitur motus attolens, et abnegatur motus in progressu. Fieri enim potest, quod sit motus aquarum in progressu, et nihilominus inundet adversa littora ejusdem alvei simul; si aquae scilicet illae contrudantur et compellantur aliunde, quemadmodum fit in fluviis, qui fluunt et refluunt ad utrumque littus horis iisdem, cum tamen iste motus liquido sit motus in progressu, nempe aquarum ingredientium ostia fluminum ex mari. Itaque simili modo fieri potest, ut aquae venientes magna mole ab Oceano Orientali Indico compellantur et trudantur in alveum Maris Atlantici, et propterea inundent utrumque latus simul. Quaerendum itaque est, an sit alius alveus per quem aquae possint iisdem temporibus minui et refluere. Atque praesto est Mare Australe, Mari Atlantico neutiquam minus, sed potius magis latum et extensum, quod ad hoc sufficere possit.

Itaque jam tandem perventum est ad instantiam crucis circa hoc subjectum. Ea talis est: si pro certo inveniatur, quod cum fit fluxus ad littora adversa tam Floridae quam Hispaniae in Mari Atlantico, fiat simul fluxus ad littora Peruviae et juxta dorsum Chinae in Mari Australi; tum certe per hanc instantiam decisoriam abjudicanda est assertio quod fluxus et refluxus maris, de quo inquiritur, fiat per motum progressivum: neque enim relinquitur aliud mare aut locus, ubi possit ad eadem tempora fieri regressus aut refluxus. Commodissime autem hoc sciri possit, si inquiratur ab incolis Panamae et Limae (ubi uterque Oceanus, Atlanticus et Australis, per parvum Isthmum separantur), utrum ad contrarias Isthmi partes fiat simul fluxus et refluxus maris, an e contra. Verum haec decisio sive abjudicatio certa videtur, posito quod terra stet immobilis. Quod si terra rotet, fieri fortasse potest ut ex inaequali rotatione (quatenus ad celeritatem sive incitationem) terrae et aquarum maris, sequatur compulsio

violenta aquarum in cumulum sursum, quae sit fluxus: et relaxatio earundem (postquam amplius cumulari non sustinuerint) in deorsum, quae sit refluxus. Verum de hoc facienda est inquisitio separatim. Attamen etiam hoc supposito, illud aeque manet fixum, quod necesse sit fieri alicubi refluxum maris ad eadem tempora quibus fiunt fluxus in aliis partibus.

Similiter, sit natura inquisita posterior ille motus ex duobus quos supposuimus, videlicet motus maris se attollens et rursus subsidens; si forte ita acciderit ut (diligenti facto examine) rejiciatur motus alter, de quo diximus, progressivus. Tum vero erit trivium circa hanc naturam tale. Necesse est ut motus iste, per quem aquae in fluxibus et refluxibus se attollunt et rursus relabuntur, absque aliqua accessione aquarum aliarum quae advolvuntur, fiat per unum ex his tribus modis; vel quod ista aquarum copia emanet ex interioribus terrae et rursus in illa se recipiat; vel quod non sit aliqua amplior moles aquarum, sed quod eaedem aquae (non aucto quanto suo) extendantur sive rarefiant, ita ut majorem locum et dimensionem occupent, et rursus se contrahant; vel quod nec copia accedat major nec extensio amplior, sed eaedem aquae (prout sunt tam copia quam densitate aut raritate) per vim aliquam magneticam desuper eas attrahentem et evocantem, et per consensum, se attollant et deinde se remittant. Itaque reducatur (si placet) jam inquisitio (missis duobus illis motibus prioribus) ad hunc ultimum; et inquiratur si fiat aliqua talis sublatio per consensum sive vim magneticam. Atqui primo manifestum est universas aquas, prout ponuntur in fossa sive cavo maris, non posse simul attolli, quia defuerit quod succedat in fundo; adeo ut si foret in aquis aliquis hujusmodi appetitus se attollendi, ille ipse tamen a nexu rerum, sive (ut vulgo loquuntur) ne detur vacuum, fractus foret et cohibitus. Relinquitur, ut attollantur aquae ex aliqua parte, et per hoc minuantur et cedant ex alia. Enimvero rursus necessario sequetur ut vis illa magnetica, cum super totum operari non possit, circa medium operetur intensissime; ita ut aquas in medio attollat, illae vero sublatae latera per successionem deserant et destituant.

Itaque jam tandem perventum est ad instantiam crucis circa hoc subjectum. Ea talis est: si inveniatur quod in refluxibus maris aquarum superficies in mari sit

arcuata magis et rotunda, attollentibus se scilicet aquis in medio maris et deficientibus circa latera, quae sunt litora; et in fluxibus eadem superficies sit magis plana et aequa, redeuntibus scilicet aquis ad priorem suam positionem; tum certe per hanc instantiam decisoriam potest recipi sublatio per vim magneticam, aliter prorsus abjudicanda est. Hoc vero in fretis per lineas nauticas non difficile est experiri; videlicet utrum in refluxibus versus medium maris, mare non sit magis altum sive profundum quam in fluxibus. Notandum autem est, si hoc ita sit, fieri (contra ac creditur) ut attollant se aquae in refluxibus, demittant se tantum in fluxibus, ita ut littora vestiant et inundent.

2. Similiter, sit natura inquisita Motus Rotationis spontaneus; et speciatim, utrum Motus Diurnus, per quem sol et stellae ad conspectum nostrum oriuntur et occidunt, sit motus rotationis verus in coelestibus, aut motus apparens in coelestibus, verus in terra. Poterit esse instantia crucis super hoc subjectum talis. Si inveniatur motus aliquis in oceano ab oriente in occidentem, licet admodum languidus et enervatus; si idem motus reperiatur paulo incitatior in aere, praesertim intra tropicos, ubi propter majores circulos est magis perceptibilis; si idem motus reperiatur in humilioribus cometis, jam factus vivus et validus; si idem motus reperiatur in planetis, ita tamen dispensatus et graduatus ut quo proprius absit a terra sit tardior, quo longius celerior, atque in coelo demum stellato sit velocissimus: tum certe recipi debet motus diurnus pro vero in coelis, et abnegandus est motus terrae; quia manifestum erit, motum ab oriente in occidentem esse plane cosmicum et ex consensu universi, qui in summitatibus coeli maxime rapidus gradatim labascat, et tandem desinat et extinguatur in immobili, videlicet terra.
Similiter, sit natura inquisita Motus Rotationis ille alter apud astronomos decantatus, renitens et contrarius Motui Diurno, videlicet ab occidente in orientem; quem veteres astronomi attribuunt planetis, etiam coelo stellato, at Copernicus et ejus sectatores terrae quoque; et quaeratur utrum inveniatur in rerum natura aliquis talis motus, an potius res conficta sit et supposita, ad compendia et commoditates calculationum, et ad pulchrum illud, scilicet de

expediendis motibus coelestibus per circulos perfectos. Neutiquam enim evincitur iste motus esse in supernis verus et realis, nec per defectum restitutionis planetae in motu diurno ad idem punctum coeli stellati, nec per diversam politatem zodiaci, habito respectu ad polos mundi; quae duo nobis hunc motum pepererunt. Primum enim phaenomenon per anteversionem et derelictionem optime salvatur; secundum per lineas spirales; adeo ut inaequalitas restitutionis et declinatio ad tropicos possint esse potius modificationes motus unici illius diurni, quam motus renitentes aut circa diversos polos. Et certissimum est, si paulisper pro plebeiis nos geramus (missis astronomorum et scholae commentis, quibus illud in more est ut sensui in multis immerito vim faciant, et obscuriora malint), talem esse motum istum ad sensum, qualem diximus; cujus imaginem per fila ferrea (veluti in machina) aliquando repraesentari fecimus.
Verum instantia crucis super hoc subjectum poterit esse talis. Si inveniatur in aliqua historia fide digna, fuisse cometam aliquem vel sublimiorem vel humiliorem qui non rotaverit cum consensu manifesto (licet admodum irregulariter) motus diurni, sed potius rotaverit in contrarium coeli; tum certe hucusque judicandum est posse esse in natura aliquem talem motum. Sin nihil hujusmodi inveniatur, habendus est pro suspecto, et ad alias instantias crucis circa hoc confugiendum.

3. Similiter, sit natura inquisita Pondus sive Grave. Bivium circa hanc naturam tale est. Necesse est ut gravia et ponderosa vel tendant ex natura sua ad centrum terrae, per proprium schematismum; vel ut a massa corporea ipsius terrae, tanquam a congregatione corporum connaturalium, attrahantur et rapiantur, et ad eam per consensum ferantur. At posterius hoc si in causa sit, sequitur ut quo propius gravia appropinquant ad terram, eo fortius et majore cum impetu ferantur ad eam; quo longius ab ea absint, debilius et tardius (ut fit in attractionibus magneticis); idque fieri intra spatium certum; adeo ut si elongata fuerint a terra tali distantia ut virtus terrae in ea agere non possit, pensilia mansura sint, ut et ipsa terra, nec omnino decasura.
Itaque talis circa hanc rem poterit esse instantia crucis. Sumatur horologium ex

iis quae moventur per pondera plumbea, et aliud ex iis quae moventur per compressionem laminae ferreae; atque vere probentur, ne alterum altero velocius sit aut tardius; deinde ponatur horologium illud movens per pondera super fastigium alicujus templi altissimi, altero illo infra detento; et notetur diligenter si horologium in alto situm tardius moveatur quam solebat, propter diminutam virtutem ponderum. Idem fiat experimentum in profundis minerarum alte sub terra depressarum, utrum horologium hujusmodi non moveatur velocius quam solebat, propter auctam virtutem ponderum. Quod si inveniatur virtus ponderum minui in sublimi, aggravari in subterraneis, recipiatur pro causa ponderis attractio a massa corporea terrae.

4. Similiter, sit natura inquisita Verticitas Acus Ferreae, tactae magnete. Circa hanc naturam tale erit bivium. Necesse est ut tactus magnetis vel ex se indat ferro verticitatem ad septentriones et austrum; vel ut excitet ferrum tantummodo et habilitet, motus autem ipse indatur ex praesentia terrae; ut Gilbertus opinatur, et tanto conatu probare nititur. Itaque huc spectant ea, quae ille perspicaci industria conquisivit. Nimirum quod clavus ferreus, qui diu duravit in situ versus septentriones et austrum, colligat mora diutina verticitatem, absque tactu magnetis: ac si terra ipsa, quae ob distantiam debiliter operatur (namque superficies aut extima incrustatio terrae virtutis magneticae, ut ille vult, expers est), per moram tamen longam magnetis tactum suppleret, et ferrum exciret, deinde excitum conformaret et verteret. Rursus, quod ferrum ignitum et cadens, si in extinctione sua exporrigatur inter septentriones et austrum, colligat quoque verticitatem absque tactu magnetis: ac si partes ferri in motu positae per ignitionem, et postea se recipientes, in ipso articulo extinctionis suae magis essent susceptivae et quasi sensitivae virtutis manantis a terra quam alias, et inde fierent tanquam excitae. Verum haec, licet bene observata, tamen non evincunt prorsus quod ille asserit.
Instantia crucis autem circa hoc subjectum poterit esse talis. Capiatur terrella ex magnete, et notentur poli ejus; et ponantur poli terrellae versus orientem et occasum, non versus septentriones et austrum, atque ita jaceant; deinde

superponatur acus ferrea intacta, et permittatur ita manere ad dies sex aut septem. Acus vero (nam de hoc non dubitatur) dum manet super magnetem, relictis polis mundi, se vertet ad polos magnetis; itaque quamdiu ita manet, vertitur scilicet ad orientem et occidentem mundi. Quod si inveniatur acus illa, remota a magnete et posita super versorium, statim se applicare ad septentriones et austrum, vel etiam paulatim se eo recipere, tum recipienda est pro causa, praesentia terrae; sin aut vertatur (ut prius) in orientem et occidentem, aut perdat verticitatem, habenda est illa causa pro suspecta, et ulterius inquirendum est.

5. Similiter, sit natura inquisita Corporea Substantia Lunae: an sit tenuis, flammea, sive aerea, ut plurimi ex priscis philosophis opinati sunt; an solida et densa, ut Gilbertus et multi moderni, cum nonnullis ex antiquis, tenent. Rationes posterioris istius opinionis fundantur in hoc maxime, quod luna radios solis reflectat; neque videtur fieri reflexio lucis nisi a solidis.
Itaque instantiae crucis circa hoc subjectum eae esse poterint (si modo aliquae sint) quae demonstrent reflexionem a corpore tenui, qualis est flamma, modo sit crassitiei sufficientis. Certe causa crepusculi, inter alias, est reflexio radiorum solis a superiore parte aeris. Etiam quandoque reflecti videmus radios solis temporibus vespertinis serenis a fimbriis nubium roscidarum, non minori splendore, sed potius illustriori et magis glorioso, quam qui redditur a corpore lunae; neque tamen constat eas nubes coaluisse in corpus densum aquae. Etiam videmus aerem tenebrosum pone fenestras noctu reflectere lucem candelae, non minus quam corpus densum. Tentandum etiam foret experimentum immissionis radiorum solis per foramen super flammam aliquam subfuscam et caeruleam. Sane radii aperti solis, incidentes in flammas obscuriores, videntur eas quasi mortificare, ut conspiciantur magis instar fumi albi quam flammae. Atque haec impraesentiarum occurrunt, quae sint ex natura instantiarum crucis circa hanc rem; et meliora fortasse reperiri possunt. Sed notandum semper est, reflexionem a flamma non esse expectandam, nisi a flamma alicujus profunditatis; nam aliter vergit ad diaphanum. Hoc autem pro certo ponendum, lucem semper in corpore aequali aut excipi et transmitti, aut resilire.

6. Similiter, sit natura inquisita Motus Missilium, veluti spiculorum, sagittarum, globulorum, per aerem. Hunc motum Schola (more suo) valde negligenter expedit; satis habens, si eum nomine motus violenti a naturali (quem vocant) distinguat; et quod ad primam percussionem sive impulsionem attinet, per illud, (quod duo corpora non possint esse in uno loco, ne fiat penetratio dimensionum,) sibi satisfaciat; et de processu continuato istius motus nihil curet. At circa hanc naturam bivium est tale: aut iste motus fit ab aere vehente et pone corpus emissum se colligente, instar fluvii erga scapham aut venti erga paleas; aut a partibus ipsius corporis non sustinentibus impressionem, sed ad eandem laxandam per successionem se promoventibus. Atque priorem illum recipit Fracastorius, et fere omnes qui de hoc motu paulo subtilius inquisiverunt: neque dubium est, quin sint aeris partes in hac re nonnullae; sed alter motus proculdubio verus est, ut ex infinitis constat experimentis. Sed inter caeteras, poterit esse circa hoc subjectum instantia crucis talis; quod lamina, aut filum ferri paulo contumacius, vel etiam calamus sive penna in medio divisa, adducta et curvata inter pollicem et digitum exiliant. Manifestum enim est, hoc non posse imputari aeri se pone corpus colligenti, quia fons motus est in medio laminae vel calami, non in extremis.

7. Similiter sit natura inquisita motus ille rapidus et potens Expansionis Pulveris Pyrii in flammam; unde tantae moles subvertuntur, tanta pondera emittuntur, quanta in cuniculis majoribus et bombardis videmus. Bivium circa hanc naturam tale est. Aut excitatur iste motus a mero corporis appetitu se dilatandi, postquam fuerit inflammatum; aut ab appetitu mixto spiritus crudi, qui rapide fugit ignem, et ex eo circumfuso, tanquam ex carcere, violenter erumpit. Schola autem et vulgaris opinio tantum versatur circa priorem illum appetitum. Putant enim homines se pulchre philosophari, si asserant flammam ex forma elementi necessitate quadam donari locum ampliorem occupandi quam idem corpus expleverat cum subiret formam pulveris, atque inde sequi motum istum. Interim minime advertunt, licet hoc verum sit, posito quod flamma generetur, tamen posse impediri flammae generationem a tanta mole, quae illam comprimere et

suffocare queat; ut non deducatur res ad istam necessitatem de qua loquuntur. Nam quod necesse sit fieri expansionem, atque inde sequi emissionem aut remotionem corporis quod obstat, si generetur flamma, recte putant. Sed ista necessitas plane evitatur, si moles illa solida flammam supprimat antequam generetur. Atque videmus flammam, praesertim in prima generatione, mollem esse et lenem, et requirere cavum in quo experiri et ludere possit. Itaque tanta violentia huic rei per se assignari non potest. Sed illud verum; generationem hujusmodi flammarum flatulentarum, et veluti ventorum igneorum, fieri ex conflictu duorum corporum, eorumque naturae inter se plane contrariae; alterius admodum inflammabilis, quae natura viget in sulphure; alterius flammam exhorrentis, qualis est spiritus crudus qui est in nitro; adeo ut fiat conflictus mirabilis, inflammante se sulphure quantum potest (nam tertium corpus, nimirum carbo salicis, nil aliud fere praestat, quam ut illa duo corpora incorporet et commode uniat), et erumpente spiritu nitri quantum potest, et una se dilatante (nam hoc faciunt et aer, et omnia cruda, et aqua, ut a calore dilatentur), et per istam fugam et eruptionem interim flammam sulphuris, tanquam follibus occultis, undequaque exufflante.

Poterant autem esse instantiae crucis circa hoc subjectum duorum generum. Alterum eorum corporum quae maxime sunt inflammabilia, qualia sunt sulphur, caphura, naphtha, et hujusmodi, cum eorum misturis; quae citius et facilius concipiunt flammam quam pulvis pyrius, si non impediantur: ex quo liquet appetitum inflammandi per se effectum illum stupendum non operari. Alterum eorum quae flammam fugiunt et exhorrent, qualia sunt sales omnes. Videmus enim, si jaciantur in ignem, spiritum aqueum erumpere cum fragore antequam flamma concipiatur; quod etiam leniter fit in foliis paulo contumacioribus, parte aquea erumpente antequam oleosa concipiat flammam. Sed maxime cernitur hoc in argento vivo, quod non male dicitur aqua mineralis. Hoc enim, absque inflammatione, per eruptionem et expansionem simplicem vires pulveris pyrii fere adaequat; quod etiam admixtum pulveri pyrio ejus vires multiplicare dicitur.

8. Similiter sit natura inquisita, Transitoria Natura Flammae, et Extinctio ejus Momentanea. Non enim videtur natura flammea hic apud nos figi et consistere,

momentanea. Non enim videtur natura flammea hic apud nos agere et consistere; sed singulis quasi momentis generari, et statim extingui. Manifestum enim est in flammis, quae hic continuantur et durant, istam durationem non esse ejusdem flammae in individuo, sed fieri per successionem novae flammae seriatim generatae, minime autem manere eandem flammam numero; id quod facile perspicitur ex hoc, quod, subtracto alimento sive fomite flammae, flamma statim pereat. Bivium autem circa hanc naturam tale est. Momentanea ista natura aut fit remittente se causa quae eam primo genuit, ut in lumine, sonis, et motibus (quos vocant) violentis; aut quod flamma in natura sua possit hic apud nos manere, sed a contrariis naturis circumfusis vim patiatur et destruatur.

Itaque poterit esse circa hoc subjectum instantia crucis talis. Videmus flammas in incendiis majoribus, quam alte in sursum ascendant. Quanto enim basis flammae est latior, tanto vertex sublimior. Itaque videtur principium extinctionis fieri circa latera, ubi ab aere flamma comprimitur et male habetur. At meditullia flammae, quae aer non contingit sed alia flamma undique circumdat, eadem numero manent, neque extinguuntur donec paulatim angustientur ab aere per latera circumfuso. Itaque omnis flamma pyramidalis est basi circa fomitem largior, vertice autem (inimicante aere, nec suppeditante fomite) acutior. At fumus angustior circa basin ascendendo dilatatur, et fit tanquam pyramis inversa; quia scilicet aer fumum recipit, flammam (neque enim quispiam somniet aerem esse flammam accensam, cum sint corpora plane heterogenea) comprimit.

Accuratior autem poterit esse instantia crucis ad hanc rem accommodata, si res forte manifestari possit per flammas bicolores. Capiatur igitur situla parva ex metallo, et in ea figatur parva candela cerea accensa; ponatur situla in patera, et circumfundatur spiritus vini in modica quantitate, quae ad labra situlae non attingat; tum accende spiritum vini. At spiritus ille vini exhibebit flammam magis scilicet caeruleam, lychnus candelae autem magis flavam. Notetur itaque utrum flamma lychni (quam facile est per colorem a flamma spiritus vini distinguere; neque enim flammae, ut liquores, statim commiscentur) maneat pyramidalis, an potius magis tendat ad formam globosam, cum nihil inveniatur quod eam destruat aut comprimat. At hoc posterius si fiat, manere flammam eandem numero, quamdiu intra aliam flammam concludatur nec vim inimicam

aeris experiatur, pro certo ponendum est.
Atque de instantiis crucis haec dicta sint. Longiores autem in iis tractandis ad hunc finem fuimus, ut homines paulatim discant et assuefiant de natura judicare per instantias crucis et experimenta lucifera, et non per rationes probabiles.

XXXVII.

Inter praerogativas instantiarum ponemus loco decimo quinto Instantias Divortii; quae indicant separationes naturarum earum quae ut plurimum occurrunt. Differunt autem ab instantiis quae subjunguntur instantiis comitatus; quia illae indicant separationes naturae alicujus ab aliquo concreto cum quo illa familiariter consuescit, hae vero separationes naturae alicujus ab altera natura. Differunt etiam ab instantiis crucis; quia nihil determinant, sed monent tantum de separabilitate unius naturae ab altera. Usus autem earum est ad prodendas falsas formas, et dissipandas leves contemplationes ex rebus obviis orientes; adeo ut veluti plumbum et pondera intellectui addant.
Exempli gratia: sint naturae inquisitae quatuor naturae illae, quas Contubernales vult esse Telesius, et tanquam ex eadem camera; *viz.* calidum, lucidum, tenue, mobile sive promptum ad motum. At plurimae inveniuntur instantiae divortii inter ipsas. Aer enim tenuis est et habilis ad motum, non calidus aut lucidus; luna lucida, absque calore; aqua fervens calida, absque lumine; motus acus ferreae super versorium pernix et agilis, et tamen in corpore frigido, denso, opaco; et complura id genus.
Similiter sint naturae inquisitae Natura Corporea et Actio Naturalis. Videtur enim non inveniri actio naturalis, nisi subsistens in aliquo corpore. Attamen possit fortasse esse circa hanc rem instantia nonnulla divortii. Ea est actio magnetica, per quam ferrum fertur ad magnetem, gravia ad globum terrae. Addi etiam possint aliae nonnullae operationes ad distans. Actio siquidem hujusmodi et in tempore fit, per momenta non in puncto temporis, et in loco, per gradus et spatia. Est itaque aliquod momentum temporis, et aliquod intervallum loci, in quibus ista virtus sive actio haeret in medio inter duo illa corpora quae motum

cient. Reducitur itaque contemplatio ad hoc; utrum illa corpora quae sunt termini motus disponant vel alterent corpora media, ut per successionem et tactum verum labatur virtus a termino ad terminum, et interim subsistat in corpore medio; an horum nihil sit, praeter corpora et virtutem et spatia? Atque in radiis opticis et sonis et calore et aliis nonnullis operantibus ad distans, probabile est media corpora disponi et alterari: eo magis, quod requiratur medium qualificatum ad deferendam operationem talem. At magnetica illa sive coitiva virtus admittit media tanquam adiaphora, nec impeditur virtus in omnigeno medio. Quod si nil rei habeat virtus illa aut actio cum corpore medio, sequitur quod sit virtus aut actio naturalis ad tempus nonnullum et in loco nonnullo subsistens sine corpore; cum neque subsistat in corporibus terminantibus, nec in mediis. Quare actio magnetica poterit esse instantia divortii circa naturam corpoream et actionem naturalem. Cui hoc adjici potest tanquam corollarium aut lucrum non praetermittendum: *viz.* quod etiam secundum sensum philosophanti sumi possit probatio quod sint entia et substantiae separatae et incorporeae. Si enim virtus et actio naturalis, emanans a corpore, subsistere possit aliquo tempore et aliquo loco omnino sine corpore; prope est ut possit etiam emanare in origine sua a substantia incorporea. Videtur enim non minus requiri natura corporea ad actionem naturalem sustentandam et devehendam, quam ad excitandam aut generandum.

XXXVIII.

Sequuntur quinque ordines instantiarum, quas uno vocabulo generali Instantias Lampadis sive Informationis Primae appellare consuevimus. Eae sunt quae auxiliantur sensui. Cum enim omnis interpretatio naturae incipiat a sensu, atque a sensuum perceptionibus recta, constanti, et munita via ducat ad perceptiones intellectus, quae sunt notiones verae et axiomata; necesse est ut, quanto magis copiosae et exactae fuerint repraesentationes sive praebitiones ipsius sensus, tanto omnia cedant facilius et foelicius.

Harum autem quinque instantiarum lampadis, primae roborant, ampliant, et rectificant actiones sensus immediatas; secundae deducunt non-sensibile ad

rectificant actiones sensus immediatas; secundae deducunt non sensibile ad sensibile; tertiae indicant processus continuatos sive series earum rerum et motuum quae (ut plurimum) non notantur nisi in exitu aut periodis; quartae aliquid substituunt sensui in meris destitutionibus; quintae excitant attentionem sensus et advertentiam, atque una limitant subtilitatem rerum. De his autem singulis jam dicendum est.

XXXIX.

Inter praerogativas instantiarum ponemus loco decimo sexto Instantias Januae sive Portae: eo enim nomine eas appellamus quae juvant actiones sensus immediatas. Inter sensus autem manifestum est partes primas tenere Visum, quoad informationem; quare huic sensui praecipue auxilia conquirenda. Auxilia autem triplicia esse posse videntur: vel ut percipiat non visa; vel ut majore intervallo; vel ut exactius et distinctius.

Primi generis sunt (missis bis-oculis et hujusmodi, quae valent tantum ad corrigendam et levandam infirmitatem visus non bene dispositi, atque ideo nihil amplius informant) ea quae nuper inventa sunt perspicilla; quae latentes et invisibiles corporum minutias, et occultos schematismos et motus (aucta insigniter specierum magnitudine) demonstrant; quorum vi, in pulice, musca, vermiculis, accurata corporis figura et lineamenta, necnon colores et motus prius non conspicui, non sine admiratione cernuntur. Quinetiam aiunt lineam rectam calamo vel penecillo descriptam, per hujusmodi perspicilla inaequalem admodum et tortuosam cerni: quia scilicet nec motus manus, licet per regulam adjutae, nec impressio atramenti aut coloris revera aequalia existant; licet illae inaequalitates tam minutae sint ut sine adjumento hujusmodi perspicillorum conspici nequeant. Etiam superstitiosam quandam observationem in hac re (ut fit in rebus novis et miris) addiderunt homines: *viz.* quod hujusmodi perspicilla opera naturae illustrent, artis dehonestent. Illud vero nihil aliud est quam quod texturae naturales multo subtiliores sint quam artificiosae. Perspicillum enim illud ad minuta tantum valet: quale perspicillum si vidisset Democritus, exiluisset forte, et modum videndi atomum (quem ille invisibilem omnino

affirmavit) inventum fuisse putasset. Verum incompetentia hujusmodi perspicillorum, praeterquam ad minutias tantum (neque ad ipsas quoque, si fuerint in corpore majusculo), usum rei destruit. Si enim inventum extendi posset ad corpora majora, aut corporum majorum minutias, adeo ut textura panni lintei conspici posset tanquam rete, atque hoc modo minutiae latentes et inaequalitates gemmarum, liquorum, urinarum, sanguinis, vulnerum, et multarum aliarum rerum, cerni possent, magnae proculdubio ex eo invento commoditates capi possent.

Secundi generis sunt illa altera perspicilla quae memorabili conatu adinvenit Galilaeus; quorum ope, tanquam per scaphas aut naviculas, aperiri et exerceri possint propiora cum coelestibus commercia. Hinc enim constat, galaxiam esse nodum sive coacervationem stellarum parvarum, plane numeratarum et distinctarum; de qua re apud antiquos tantum suspicio fuit. Hinc demonstrari videtur, quod spatia orbium (quos vocant) planetarum non sint plane vacua aliis stellis, sed quod coelum incipiat stellescere antequam ad coelum ipsum stellatum ventum sit; licet stellis minoribus quam ut sine perspicillis istis conspici possint. Hinc choreas illas stellarum parvarum circa planetam Jovis (unde conjici possit esse in motibus stellarum plura centra) intueri licet. Hinc inaequalitates luminosi et opaci in luna distinctius cernuntur et locantur; adeo ut fieri possit quaedam seleno-graphia. Hinc maculae in sole, et id genus: omnia certe inventa nobilia, quatenus fides hujusmodi demonstrationibus tuto adhiberi possit. Quae nobis ob hoc maxime suspectae sunt, quod in istis paucis sistatur experimentum, neque alia complura investigatu aeque digna eadem ratione inventa sint.

Tertii generis sunt bacilla illa ad terras mensurandas, astrolabia, et similia; quae sensum videndi non ampliant, sed rectificant et dirigunt. Quod si sint aliae instantiae quae reliquos sensus juvent in ipsorum actionibus immediatis et individuis, tamen si ejusmodi sint quae informationi ipsi nihil addant plus quam jam habetur, ad id quod nunc agitur non faciunt. Itaque earum mentionem non fecimus.

XL.

Inter praerogativas instantiarum ponemus loco decimo septimo Instantias Citantes, sumpto vocabulo a foris civilibus, quia citant ea ut compareant quae prius non comparuerunt; quas etiam Instantias Evocantes appellare consuevimus. Eae deducunt non-sensibile ad sensibile.
Sensum autem fugiunt res, vel propter distantiam objecti locati; vel propter interceptionem sensus per corpora media; vel quia objectum non est habile ad impressionem in sensu faciendam; vel quia deficit quantum in objecto pro feriendo sensu; vel quia tempus non est proportionatum ad actuandum sensum; vel quia objecti percussio non toleratur a sensu; vel quia objectum ante implevit et possedit sensum, ut novo motui non sit locus. Atque haec praecipue ad visum pertinent, et deinde ad tactum. Nam hi duo sensus sunt informativi ad largum, atque de communibus objectis; ubi reliqui tres non informent fere, nisi immediate et de propriis objectis.

1. In primo genere non fit deductio ad sensibile, nisi rei, quae cerni non possit propter distantiam, adjiciatur aut substituatur alia res quae sensum magis e longinquo provocare et ferire possit: veluti in significatione rerum per ignes, campanas, et similia.

2. In secundo genere fit deductio, cum ea quae interius propter interpositionem corporum latent, nec commode aperiri possunt, per ea quae sunt in superficie, aut ab interioribus effluunt, perducuntur ad sensum: ut status humanorum corporum per pulsus, et urinas, et similia.

3 and 4. At tertii et quarti generis deductiones ad plurima spectant, atque undique in rerum inquisitione sunt conquirendae. Hujus rei exempla sunt. Patet quod aer, et spiritus, et hujusmodi res quae sunt toto corpore tenues et subtiles, nec cerni nec tangi possint. Quare in inquisitione circa hujusmodi corpora deductionibus omnino est opus.
Sit itaque natura inquisita Actio et Motus Spiritus qui includitur in corporibus tangibilibus. Omne enim tangibile apud nos continet spiritum invisibilem et intactilem, eique obducitur atque eum quasi vestit. Hinc fons triplex potens ille

et mirabilis processus spiritus in corpore tangibili. Spiritus enim in re tangibili, emissus, corpora contrahit et desiccat; detentus, corpora intenerat et colliquat; nec prorsus emissus nec prorsus detentus, informat, membrificat, assimilat, egerit, organizat, et similia. Atque haec omnia deducuntur ad sensibile per effectus conspicuos.

Etenim in omni corpore tangibili inanimato, spiritus inclusus primo multiplicat se, et tanquam depascit partes tangibiles eas quae sunt maxime ad hoc faciles et praeparatae, easque digerit et conficit et vertit in spiritum, et deinde una evolant. Atque haec confectio et multiplicatio spiritus deducitur ad sensum per diminutionem ponderis. In omni enim desiccatione, aliquid defluit de quanto; neque id ipsum ex spiritu tantum praeinexistente, sed ex corpore quod prius fuit tangibile et noviter versum est: spiritus enim non ponderat. Egressus autem sive emissio spiritus deducitur ad sensibile in rubigine metallorum, et aliis putrefactionibus ejus generis quae sistunt se antequam pervenerint ad rudimenta vitae; nam illae ad tertium genus processus pertinent. Etenim in corporibus magis compactis spiritus non invenit poros et meatus per quos evolet: itaque cogitur partes ipsas tangibiles protrudere et ante se agere, ita ut illae simul exeant; atque inde fit rubigo, et similia. At contractio partium tangibilium, postquam aliquid de spiritu fuerit emissum (unde sequitur illa desiccatio), deducitur ad sensibile tum per ipsam duritiem rei auctam, tum multo magis per scissuras, angustiationes, corrugationes, et complicationes corporum, quae inde sequuntur. Etenim partes ligni desiliunt et angustiantur; pelles currugantur; neque id solum, sed (si subita fuerit emissio spiritus per calorem ignis) tantum properant ad contractionem ut se complicent et convolvant.

At contra, ubi spiritus detinetur, et tamen dilatatur et excitatur per calorem aut ejus analoga (id quod fit in corporibus magis solidis aut tenacibus), tum vero corpora emolliuntur, ut ferrum candens; fluunt, ut metalla; liquefiunt, ut gummi, cera, et similia. Itaque contrariae illae operationes caloris (ut ex eo alia durescant, alia liquescant) facile conciliantur; quia in illis spiritus emittitur, in his agitatur et detinetur: quorum posterius est actio propria caloris et spiritus; prius, actio partium tangibilium tantum per occasionem spiritus emissi.

Ast ubi spiritus nec detinetur prorsus nec prorsus emittitur, sed tantum inter claustra sua tentat et experitur, atque nacta est partes tangibiles obedientes et sequaces in promptu, ita ut quo spiritus agit eae simul sequantur; tum vero sequitur efformatio in corpus organicum, et membrificatio, et reliquae actiones vitales, tam in vegetabilibus quam in animalibus. Atque haec maxime deducuntur ad sensum per notationes diligentes primorum incoeptuum et rudimentorum sive tentamentorum vitae in animalculis ex putrefactione natis: ut in ovis formicarum, vermibus, muscis, ranis post imbrem, *etc.* Requiritur autem ad vivificationem et lenitas caloris et lentor corporis; ut spiritus nec per festinationem erumpat, nec per contumaciam partium coerceatur, quin potius ad cerae modum illas plicare et effingere possit.

Rursus, differentia illa spiritus, maxime nobilis et ad plurima pertinens (viz. spiritus abscissi, ramosi simpliciter, ramosi simul et cellulati; ex quibus prior est spiritus omnium corporum inanimatorum, secundus vegetabilium, tertius animalium), per plurimas instantias deductorias tanquam sub oculos ponitur. Similiter patet, quod subtiliores texturae et schematismi rerum (licet toto corpore visibilium aut tangibilium) nec cernantur nec tangantur. Quare in his quoque per deductionem procedit informatio. At differentia schematismorum maxime radicalis et primaria sumitur ex copia vel paucitate materiae quae subit idem spatium sive dimensum. Reliqui enim schematismi (qui referuntur ad dissimilaritates partium, quae in eodem corpore continentur, et collocationes ac posituras earundem) prae illo altero sunt secundarii.

Sit itaque natura inquisita Expansio sive Coitio Materiae in corporibus respective: *viz.* quantum materiae impleat quantum dimensum in singulis. Etenim nil verius in natura quam propositio illa gemella, ex nihilo nihil fieri, neque quicquam in nihilum redigi: verum quantum ipsum materiae sive summam totalem constare, nec augeri aut minui. Nec illud minus verum, ex quanto illo materiae sub iisdem spatiis sive dimensionibus, pro diversitate corporum, plus et minus contineri: ut in aqua plus, in aere minus; adeo ut si quis asserat aliquod contentum aquae in par contentum aeris verti posse, idem sit ac si dicat aliquid posse redigi in nihilum; contra, si quis asserat aliquod contentum

aeris in par contentum aquae verti posse, idem sit ac si dicat aliquid posse fieri ex nihilo. Atque ex copia ista et paucitate materiae notiones illae densi et rari, quae varie et promiscue accipiuntur, proprie abstrahuntur. Assumenda est et assertio illa tertia, etiam satis certa: quod hoc de quo loquimur plus et minus materiae in corpore hoc vel illo ad calculos (facta collatione) et proportiones exactas aut exactis propinquas reduci possit. Veluti si quis dicat inesse in dato contento auri talem coacervationem materiae, ut opus habeat spiritus vini, ad tale quantum materiae aequandum, spatio vicies et semel majore quam implet aurum, non erraverit.

Coacervatio autem materiae et rationes ejus deducuntur ad sensibile per pondus. Pondus enim respondet copiae materiae, quoad partes rei tangibilis; spiritus autem, et ejus quantum ex materia, non venit in computationem per pondus; levat enim pondus potius quam gravat. At nos hujus rei tabulam fecimus satis accuratam; in qua pondera et spatia singulorum metallorum, lapidum praecipuorum, lignorum, liquorum, oleorum, et plurimorum aliorum corporum tam naturalium quam artificialium, excepimus: rem polychrestam, tam ad lucem informationis quam ad normam operationis; et quae multas res revelet omnino praeter expectatum. Neque illud pro minimo habendum est, quod demonstret omnem varietatem quae in corporibus tangibilibus nobis notis versatur (intelligimus autem corpora bene unita, nec plane spongiosa et cava et magna ex parte aere impleta) non ultra rationes partium 21 excedere: tam finita scilicet est natura, aut saltem illa pars ejus cujus usus ad nos maxime pertinet.

Etiam diligentiae nostrae esse putavimus, experiri si forte capi possint rationes corporum non tangibilium sive pneumaticorum, respectu corporum tangibilium. Id quod tali molitione aggressi sumus. Phialam vitream accepimus, quae unciam fortasse unam capere possit; parvitate vasis usi, ut minori cum calore posset fieri evaporatio sequens. Hanc phialam spiritu vini implevimus fere ad collum; eligentes spiritum vini, quod per tabulam priorem eum esse ex corporibus tangibilibus (quae bene unita, nec cava sunt) rarissimum, et minimum continens materiae sub suo dimenso, observavimus. Deinde pondus aquae cum phiala ipsa exacte notavimus. Postea vesicam accepimus, quae circa duas pintas contineret.

Ex ea aerem omnem, quoad fieri potuit, expressimus eo usque ut vesicae ambo latera essent contigua: etiam prius vesicam oleo oblevimus cum fricatione leni, quo vesica esset clausior: ejus, si qua erat, porositate oleo obturata. Hanc vesicam circa os phialae, ore phialae intra os vesicae recepto, fortiter ligavimus; filo parum cerato, ut melius adhaeresceret arctius ligaret. Tum demum phialam supra carbones ardentes in foculo collocavimus. At paulo post vapor sive aura spiritus vini, per calorem dilatati et in pneumaticum versi, vesicam paulatim sufflavit, eamque universam veli instar undequaque extendit. Id postquam factum fuit, continuo vitrum ab igne removimus, et super tapetem posuimus ne frigore disrumperetur; statim quoque in summitate vesicae foramen fecimus, ne vapor, cessante calore, in liquorem restitutus resideret, et rationes confunderet. Tum vero vesicam ipsam sustulimus, et rursus pondus excepimus spiritus vini qui remanebat. Inde quantum consumptum fuisset in vaporem seu pneumaticum computavimus: et facta collatione quantum locum sive spatium illud corpus implesset quando esset spiritus vini in phiala, et rursus quantum spatium impleverit postquam factum fuisset pneumaticum in vesica, rationes subduximus: ex quibus manifeste liquebat, corpus istud ita versum et mutatum expansionem centuplo majorem quam antea habuisset acquisivisse.

Similiter sit natura inquisita Calor aut Frigus; ejus nempe gradus, ut a sensu non percipiantur ob debilitatem. Haec deducuntur ad sensum per vitrum calendare, quale superius descripsimus. Calor enim et frigus, ipsa non percipiuntur ad tactum; at calor aerem expandit, frigus contrahit. Neque rursus illa expansio et contractio aeris percipitur ad visum; at aer ille expansus aquam deprimit, contractus attollit; ac tum demum fit deductio ad visum, non ante, aut alias.

Similiter sit natura inquisita Mistura Corporum: *viz.* quid habeant ex aqueo, quid ex oleoso, quid ex spiritu, quid ex cinere et salibus, et hujusmodi; vel etiam (in particulari) quid habeat lac butyri, quid coaguli, quid seri, et hujusmodi. Haec deducuntur ad sensum per artificiosas et peritas separationes, quatenus ad tangibilia. At natura spiritus in ipsis, licet immediate non percipiatur, tamen deprehenditur per varios motus et nixus corporum tangibilium in ipso actu et processu separationis suae; atque etiam per acrimonias, corrosiones, et diversos

colores, odores, et sapores eorundem corporum post separationem. Atque in hac parte, per distillationes atque artificiosas separationes, strenue sane ab hominibus elaboratum est; sed non multo foelicius quam in caeteris experimentis, quae adhuc in usu sunt: modis nimirum prorsus palpatoriis, et viis caecis, et magis operose quam intelligenter; et (quod pessimum est) nulla cum imitatione aut aut aemulatione naturae, sed cum destructione (per calores vehementes aut virtutes nimis validas) omnis subtilioris schematismi, in quo occultae rerum virtutes et consensus praecipue sitae sunt. Neque illud etiam, quod alias monuimus, hominibus in mentem aut observationem venire solet in hujusmodi separationibus: hoc est, plurimas qualitates, in corporum vexationibus tam per ignem quam alios modos, indi ab ipso igne iisque corporibus quae ad separationem adhibentur, quae in composito prius non fuerunt; unde mirae fallaciae. Neque enim scilicet vapor universus, qui ex aqua emittitur per ignem, vapor aut aer antea fuit in corpore aquae; sed factus est maxima ex parte per dilatationem aquae ex calore ignis.
Similiter in genere omnes exquisitae probationes corporum sive naturalium sive artificialium, per quas vera dignoscuntur ab adulterinis, meliora a vilioribus, huc referri debent: deducunt enim non-sensibile ad sensibile. Sunt itaque diligenti cura undique conquirendae.

5. Quintum vero genus latitantiae quod attinet, manifestum est actionem sensus transigi in motu, motum in tempore. Si igitur motus alicujus corporis sit vel tam tardus, vel tam velox, ut non sit proportionatus ad momenta in quibus transigitur actio sensus, objectum omnino non percipitur; ut in motu indicis horologii, et rursus in motu pilae sclopeti. Atque motus qui ob tarditatem non percipitur, facile et ordinario deducitur ad sensum per summas motus; qui vero ob velocitatem, adhuc non bene mensurari consuevit; sed tamen postulat inquisitio naturae ut hoc fiat in aliquibus.

6. Sextum autem genus, ubi impeditur sensus propter nobilitatem objecti, recipit deductionem, vel per elongationem majorem objecti a sensu; vel per hebetationem objecti per interpositionem medii talis, quod objectum debilitet,

non annihilet; vel per admissionem et exceptionem objecti reflexi, ubi percussio directa sit nimis fortis, ut solis in pelvi aquae.

7. Septimum autem genus latitantiae, ubi sensus ita oneratur objecto ut novae admissioni non sit locus, non habet fere locum nisi in olfactu et odoribus; nec ad id quod agitur multum pertinet. Quare de deductionibus non-sensibilis ad sensibile, haec dicta sint.
Quandoque tamen deductio fit non ad sensum hominis, sed ad sensum alicujus alterius animalis cujus sensus in aliquibus humanum excellet: ut nonnullorum odorum, ad sensum canis; lucis, quae in aere non extrinsecus illuminato latenter existit, ad sensum felis, noctuae, et hujusmodi animalium quae cernunt noctu. Recte enim notavit Telesius, etiam in aere ipso inesse lucem quandam originalem, licet exilem et tenuem, et maxima ex parte oculis hominum aut plurimorum animalium non inservientem; qui illa animalia, ad quorum sensum hujusmodi lux est proportionata, cernant noctu; id quod vel sine luce fieri, vel per lucem internam, minus credibile est.
Atque illud utique notandum est, de destitutionibus sensuum eorumque remediis hic nos tractare. Nam fallaciae sensuum ad proprias inquisitiones de sensu et sensibili remittendae sunt: excepta illa magna fallacia sensuum nimirum quod constituant lineas rerum ex analogia hominis, et non ex analogia universi; quae non corrigitur nisi per rationem et philosophiam universalem.

XLI.

Inter praerogativas instantiarum ponemus loco decimo octavo Instantias Viae, quas etiam Instantias Itinerantes et Instantias Articulatas appellare consuevimus. Eae sunt quae indicant naturae motus gradatim continuatos. Hoc autem genus instantiarum potius fugit observationem quam sensum. Mira enim est hominum circa hanc rem indiligentia. Contemplantur siquidem naturam tantummodo desultorie et per periodos, et postquam corpora fuerint absoluta ac completa, et non in operatione sua. Quod si artificis alicujus ingenia et industriam explorare et contemplari quis cuperet, is non tantum materias rudes artis atque deinde

opera perfecta conspicere desideraret, sed potius praesens esse cum artifex operatur et opus suum promovet. Atque simile quiddam circa naturam faciendum est. Exempli gratia; si quis de vegetatione plantarum inquirat, ei inspiciendum est ab ipsa satione seminis alicujus (id quod per extractionem, quasi singulis diebus, seminum quae per biduum, triduum, quatriduum, et sic deinceps, in terra manserunt, eorumque diligentem intuitum, facile fieri potest), quomodo et quando semen intumescere et turgere incipiat et veluti spiritu impleri; deinde quomodo corticulam rumpere et emittere fibras, cum latione nonnulla sui interim sursum, nisi terra fuerit admodum contumax; quomodo etiam emittat fibras, partim radicales deorsum, partim cauliculares sursum, aliquando serpendo per latera, si ex ea parte inveniat terram apertam et magis facilem; et complura id genus. Similiter facere oportet circa exclusionem ovorum; ubi facile conspici dabitur processus vivificandi et organizandi, et quid et quae partes fiant ex vitello, quid ex albumine ovi, et alia. Similis est ratio circa animalia ex putrefactione. Nam circa animalia perfecta et terrestria, per exectiones foetuum ex utero, minus humanum esset ista inquirere; nisi forte per occasiones abortuum, et venationum, et similium. Omnino igitur vigilia quaedam servanda est circa naturam, ut quae melius se conspiciendam praebeat noctu quam interdiu. Istae enim contemplationes tanquam nocturnae censeri possint, ob lucernae parvitatem et perpetuationem.

Quin et in inanimatis idem tentandum est; id quod nos fecimus in inquirendis aperturis liquorum per ignem. Alius enim est modus aperturae in aqua, alius in vino, alius in aceto, alius in omphacio; longe alius in lacte, et oleo, et caeteris. Id quod facile cernere erat per ebullitionem super ignem lenem, et in vase vitreo, ubi omnia cerni perspicue possint. Verum haec brevius perstringimus; fusius et exactius de iis sermones habituri, cum ad inventionem latentis rerum processus ventum erit. Semper enim memoria tenendum est, nos hoc loco non res ipsas tractare, sed exempla tantum adducere.

XLII.

Inter praerogativas instantiarum ponemus loco decimo nono Instantias

Inter praerogativas instantiarum ponimus loco decimo nono Instantias Supplementi, sive Substitutionis; quas etiam Instantias Perfugii appellare consuevimus. Eae sunt, quae supplent informationem ubi sensus plane destituitur; atque idcirco ad eas confugimus cum instantiae propriae haberi non possint. Dupliciter autem fit substitutio; aut per Graduationem, aut per Analoga. Exempli gratia: non invenitur medium quod inhibeat prorsus operationem magnetis in movendo ferrum; non aurum interpositum, non argentum, non lapis, non vitrum, lignum, aqua, oleum, pannus aut corpora fibrosa, aer, flamma, et caetera. Attamen per probationem exactam fortasse inveniri possit aliquod medium, quod hebetet virtutem ipsius plus quam aliquod aliud, comparative et in aliquo gradu: veluti quod non trahat magnes ferrum per tantam crassitiem auri quam per par spatium aeris; aut per tantum argentum ignitum quam per frigidum; et sic de similibus. Nam de his nos experimentum non fecimus; sed sufficit tamen ut proponantur loco exempli. Similiter non invenitur hic apud nos corpus quod non suscipiat calidum igni approximatum. Attamen longe citius suscipit calorem aer quam lapis. Atque talis est substitutio quae fit per Gradus. Substitutio autem per Analoga, utilis sane, sed minus certa est; atque idcirco cum judicio quodam adhibenda. Ea fit, cum deducitur non-sensibile ad sensum, non per operationes sensibiles ipsius corporis insensibilis, sed per contemplationem corporis alicujus cognati sensibilis. Exempli gratia: si inquiratur de Mistura Spirituum, qui sunt corpora non-visibilia, videtur esse cognatio quaedam inter corpora et fomites sive alimenta sua. Fomes autem flammae videtur esse oleum et pinguia; aeris, aqua et aquea: flammae enim multiplicant se super halitus olei, aer super vapores aquae. Videndum itaque de mistura aquae et olei, quae se manifestat ad sensum; quandoquidem mistura aeris et flammei generis fugiat sensum. At oleum et aqua inter se per compositionem aut agitationem imperfecte admodum miscentur: eadem in herbis, et sanguine, et partibus animalium, accurate et delicate miscentur. Itaque simile quiddam fieri possit circa misturam flammei et aerei generis in spiritalibus: quae per confusionem simplicem non bene sustinent misturam, eadem tamen in spiritibus plantarum et animalium misceri videntur; praesertim cum omnis spiritus animatus depascat humida utraque, aquea et pinguia, tanquam fomites suos.

utraque, aquea et pinguia, tanquam terminos suos.
Similiter si non de perfectioribus misturis spiritalium, sed de compositione tantum inquiratur; nempe, utrum facile inter se incorporentur, an potius (exempli gratia) sint aliqui venti et exhalationes, aut alia corpora spiritalia, quae non miscentur cum aere communi, sed tantum haerent et natant in eo, in globulis et guttis, et potius franguntur ac comminuuntur ab aere quam in ipsum recipiuntur et incorporantur: hoc in aere communi et aliis spiritalibus, ob subtilitatem corporum, percipi ad sensum non potest; attamen imago quaedam hujus rei, quatenus fiat, concipi possit in liquoribus argenti vivi, olei, aquae; atque etiam in aere, et fractione ejus, quando dissipatur et ascendit in parvis portiunculis per aquam; atque etiam in fumis crassioribus; denique in pulvere excitato et haerente in aere; in quibus omnibus non fit incorporatio. Atque repraesentatio praedicta in hoc subjecto non mala est, si illud primo diligenter inquisitum fuerit, utrum possit esse talis heterogenia inter spiritalia qualis invenitur inter liquida; nam tum demum haec simulacra per Analogiam non incommode substituentur. Atque de instantiis istis supplementi, quod diximus informationem ab iis hauriendam esse, quando desint instantiae propriae, loco perfugii; nihilominus intelligi volumus, quod illae etiam magni sint usus etiam cum propriae instantiae adsint; ad roborandam scilicet informationem una cum propriis. Verum de his exactius dicemus quando ad Adminicula Inductionis tractanda sermo ordine dilabetur.

XLIII.

Inter praerogativas instantiarum ponemus loco vicesimo Instantias Persecantes; quas etiam Instantias Vellicantes appellare consuevimus, sed diversa ratione. Vellicantes enim eas appellamus, quia vellicant intellectum, persecantes, quia persecant naturam: unde etiam illas quandoque Instantias Democriti nominamus. Eae sunt, quae de admirabili et exquisita subtilitate naturae intellectum submonent, ut excitetur et expergiscatur ad attentionem et observationem et inquisitionem debitam. Exempli gratia: quod parum guttulae atramenti ad tot literas vel lineas extendatur; quod argentum, exterius tantum inauratum, ad

tantam longitudinem fili inauratı contınuetur; quod pusillus vermiculus, qualis ın cute invenitur, habeat in se spiritum simul et figuram dissimilarem partium; quod parum croci etiam dolium aquae colore inficiat; quod parum zibethi aut aromatis longe majus contentum aeris odore; quod exiguo suffitu tanta excitetur nubes fumi; quod sonorum tam accuratae differentiae, quales sint voces articulatae, per aerem undequaque vehantur, atque per foramina et poros etiam ligni et aquae (licet admodum extenuatae) penetrent, quin etiam repercutiantur, idque tam distincte et velociter; quod lux et color, etiam tanto ambitu et tam perniciter, per corpora solida vitri, aquae, et cum tanta et tam exquisita varietate imaginum permeent, etiam refringantur et reflectantur; quod magnes per corpora omnigena, etiam maxime compacta, operetur: sed (quod magis mirum est) quod in his omnibus, in medio adiaphoro (quale est aer) unius actio aliam non magnopere impediat; nempe quod eodem tempore per spatia aeris devehantur et visibilium tot imagines, et vocis articulatae tot percussiones, et tot odores specificati, ut violae, rosae; etiam calor et frigus et virtutes magneticae; omnia (inquam) simul, uno alterum non impediente, ac si singula haberent vias et meatus suos proprios separatos, neque unum in alterum impingeret aut incurreret.
Solemus tamen utiliter hujusmodi instantiis persecantibus subjungere instantias, quas Metas Persecationis appellare consuevimus; veluti quod in iis, quae diximus, una actio in diverso genere aliam non perturbet aut impediat, cum tamen in eodem genere una aliam domet et extinguat: veluti, lux solis, lucem cicindelae; sonitus bombardae, vocem; fortior odor, delicatiorem; intensior calor, remissiorem; lamina ferri interposita inter magnetem et aliud ferrum, operationem magnetis. Verum de his quoque inter Adminicula Inductionis erit proprius dicendi locus.

XLIV.

Atque de instantiis quae juvant sensum, jam dictum est; quae praecipui usus sunt ad Partem Informativam. Informatio enim incipit a sensu. At universum negotium desinit in Opera; atque quemadmodum illud principium, ita hoc finis rei est. Sequentur itaque instantiae praecipui usus ad partem operativam. Eae

genere duae sunt, numero septem; quas universas, generali nomine, Instantias Practicas appellare consuevimus. Operativae autem partis, vitia duo; totidemque dignitates instantiarum in genere. Aut enim fallit operatio, aut onerat nimis. Fallit operatio maxime (praesertim post diligentem naturarum inquisitionem) propter male determinatas et mensuratas corporum vires et actiones. Vires autem et actiones corporum circumscribuntur et mensurantur, aut per spatia loci, aut per momenta temporis, aut per unionem quanti, aut per praedominantiam virtutis; quae quatuor nisi fuerint probe et diligenter pensitata, erunt fortasse scientiae speculatione quidem pulchrae, sed opere inactivae. Instantias vero quatuor itidem, quae huc referuntur, uno nomine Instantias Mathematicas vocamus, et Instantias Mensurae.

Onerosa autem fit praxis, vel propter misturam rerum inutilium, vel propter multiplicationem instrumentorum, vel propter molem materiae et corporum quae ad aliquod opus requiri contigerint. Itaque eae instantiae in pretio esse debent, quae aut dirigunt operativam ad ea quae maxime hominum intersunt; aut quae parcunt instrumentis; aut quae parcunt materiae sive supellectili. Eas autem tres instantias quae huc pertinent, uno nomine Instantias Propitias sive Benevolas vocamus. Itaque de his septem instantiis jam sigillatim dicemus; atque cum iis partem illam de Praerogativis sive Dignitatibus Instantiarum claudemus.

XLV.

Inter praerogativas instantiarum ponemus loco vicesimo primo Instantias Virgae, sive Radii; quas etiam Instantias Perlationis, vel de Non Ultra appellare consuevimus. Virtutes enim rerum et motus operantur et expediuntur per spatia non indefinita aut fortuita, sed finita et certa; quae ut in singulis naturis inquisitis teneantur et notentur plurimum interest practicae, non solum ad hoc, ut non fallat, sed etiam ut magis sit aucta et potens. Etenim interdum datur virtutes producere, et distantias tanquam retrahere in propius; ut in perspecillis.

Atque plurimae virtutes operantur et afficiunt tantum per tactum manifestum; ut fit in percussione corporum, ubi alterum non summovet alterum, nisi impellens impulsum tangat. Etiam medicinae quae exterius applicantur, ut unguenta

impulsum tangat. Etiam medicinae quae externus applicantur, ut unguenta, emplastra, non exercent vires suas nisi per tactum corporis. Denique objecta sensuum tactus et gustus non feriunt nisi contigua organis.
Sunt et aliae virtutes quae operantur ad distantiam, verum valde exiguam, quarum paucae adhuc notatae sunt, cum tamen plures sint quam homines suspicentur: ut (capiendo exempla ex vulgatis) cum succinum aut gagates trahunt paleas; bullae approximatae solvunt bullas; medicinae nonnullae purgativae eliciunt humores ex alto, et hujusmodi. At virtus illa magnetica per quam ferrum et magnes, vel magnetes invicem, coeunt, operatur intra orbem virtutis certum, sed parvum; ubi contra, si sit aliqua virtus magnetica emanans ab ipsa terra (paulo nimirum interiore) super acum ferream, quatenus ad verticitatem, operatio fiat ad distantiam magnam.
Rursus, si sit aliqua vis magnetica quae operetur per consensum inter globum terrae et ponderosa, aut inter globum lunae et aquas maris (quae maxime credibilis videtur in fluxibus et refluxibus semi-menstruis), aut inter coelum stellatum et planetas, per quam evocentur et attollantur ad sua apogaea; haec omnia operantur ad distantias admodum longinquas. Inveniuntur et quaedam inflammationes sive conceptiones flammae, quae fiunt ad distantias bene magnas, in aliquibus materiis; ut referunt de naphtha Babylonica. Calores etiam insinuant se per distantias amplas, quod etiam faciunt frigora; adeo ut habitantibus circa Canadam moles sive massae glaciales, quae abrumpuntur et natant per oceanum septentrionalem et deferuntur per Atlanticum versus illas oras, percipiantur et incutiant frigora e longinquo. Odores quoque (licet in his videatur semper esse quaedam emissio corporea) operantur ad distantias notabiles; ut evenire solet navigantibus juxta litora Floridae, aut etiam nonnulla Hispaniae, ubi sunt sylvae totae ex arboribus limonum, arantiorum, et hujusmodi plantarum odoratarum, aut frutices rorismarini, majoranae, et similium. Postremo radiationes lucis et impressiones sonorum operantur scilicet ad distantias spatiosas.
Verum haec omnia, utcunque operentur ad distantias parvas sive magnas, operantur certe ad finitas et naturae notas, ut sit quiddam Non Ultra: idque pro rationibus, aut molis seu quanti corporum; aut vigoris et debilitatis virtutum; aut

rationibus, aut minus sed quanti corporum, aut vigoris et debilitatis virtutum, aut favoribus et impedimentis mediorum; quae omnia in computationem venire et notari debent. Quinetiam mensurae motuum violentorum (quos vocant), ut missilium, tormentorum, rotarum, et similium, cum hae quoque manifesto suos habeant limites certos, notandae sunt.

Inveniuntur etiam quidam motus et virtutes contrariae illis, quae operantur per tactum et non ad distans; quae operantur scilicet ad distans et non ad tactum; et rursus, quae operantur remissius ad distantiam minorem et fortius ad distantiam majorem. Etenim visio non bene transigitur ad tactum, sed indiget medio et distantia. Licet meminerim me audisse ex relatione cujusdam fide digni, quod ipse in curandis oculorum suorum cataractis (erat autem cura talis, ut immitteretur festuca quaedam parva argentea intra primam oculi tunicam, quae pelliculam illam cataractae removeret et truderet in angulum oculi) clarissime vidisset festucam illam supra ipsam pupillam moventem. Quod utcunque verum esse possit, manifestum est majora corpora non bene aut distincte cerni nisi in cuspide coni, coeuntibus radiis objecti ad nonnullam distantiam. Quin etiam in senibus oculus melius cernit remoto objecto paulo longius, quam propius. In missilibus autem certum est percussionem non fieri tam fortem ad distantiam nimis parvam, quam paulo post. Haec itaque et similia in mensuris motuum quoad distantias notanda sunt.

Est et aliud genus mensurae localis motuum, quod non praetermittendum est. Illud vero pertinet ad motus non progressivos, sed sphaericos; hoc est, ad expansionem corporum in majorem sphaeram, aut contractionem in minorem. Inquirendum enim est inter mensuras istas motuum, quantam compressionem aut extensionem corpora (pro natura ipsorum) facile et libenter patiantur, et ad quem terminum reluctari incipiant, adeo ut ad extremum Non Ultra ferant; ut cum vesica inflata comprimitur, sustinet illa compressionem nonnullam aeris, sed si major fuerit, non patitur aer, sed rumpitur vesica.

At nos hoc ipsum subtiliore experimento magis exacte probavimus. Accepimus enim campanulam ex metallo, leviorem scilicet et tenuiorem, quali ad excipiendum salem utimur; eamque in pelvim aquae immisimus, ita ut deportaret secum aerem qui continebatur in concavo usque ad fundum pelvis. Locaveramus

solum aerem qui continebatur in concavo usque ad fundum pelvis. Locavimus autem prius globulum in fundo pelvis, super quem campanula imponenda esset. Quare illud eveniebat, ut si globulus ille esset minusculus (pro ratione concavi), reciperet se aer in locum minorem, et contruderetur solum, non extruderetur. Quod si grandioris esset magnitudinis quam ut aer libenter cederet, tum aer majoris pressurae impatiens campanulam ex aliqua parte elevabat, et in bullis ascendebat.

Etiam ad probandum qualem extensionem (non minus quam compressionem) pateretur aer, tale quippiam practicavimus. Ovum vitreum accepimus, cum parvo foramine in uno extremo ovi. Aerem per foramen exuctione forti attraximus, et statim digito foramen illud obturavimus, et ovum in aquam immersimus, et dein digitum removimus. Aer vero tensura illa per exuctionem facta tortus et magis quam pro natura sua dilatatus, ideoque se recipere et contrahere nitens (ita ut si ovum illud in aquam non fuisset immersum, aerem ipsum traxisset cum sibilo), aquam traxit ad tale quantum quale sufficere posset ad hoc, ut aer antiquam recuperaret sphaeram sive dimensionem.

Atque certum est corpora tenuiora (quale est aer) pati contractionem nonnullam notabilem, ut dictum est; at corpora tangibilia (quale est aqua) multo aegrius et ad minus spatium patiuntur compressionem. Qualem autem patiatur, tali experimento inquisivimus.

Fieri fecimus globum ex plumbo cavum, qui duas circiter pintas vinarias contineret; eumque satis per latera crassum, ut majorem vim sustineret. In illum aquam immisimus, per foramen alicubi factum; atque foramen illud, postquam globus aqua impletus fuisset, plumbo liquefacto obturavimus, ut globus deveniret plane consolidatus. Dein globum forti malleo ad duo latera adversa complanavimus; ex quo necesse fuit aquam in minus contrahi, cum sphaera figurarum sit capacissima. Deinde, cum malleatio non amplius sufficeret, aegrius se recipiente aqua, molendino seu torculari usi sumus; ut tandem aqua, impatiens pressurae ulterioris, per solida plumbi (instar roris delicati) exstillaret. Postea, quantum spatii per eam compressionem imminutum foret computavimus; atque tantam compressionem passam esse aquam (sed violentia magna subactam) intelleximus.

At solidiora, sicca, aut magis compacta, qualia sunt lapides et ligna, necnon metalla, multo adhuc minorem compressionem aut extensionem, et fere imperceptibilem ferunt; sed vel fractione, vel progressione, vel aliis pertentationibus se liberant: ut in curvationibus ligni aut metalli, horologiis moventibus per complicationem laminae, missilibus, malleationibus, et innumeris aliis motibus apparet. Atque haec omnia cum mensuris suis in indagatione naturae notanda et exploranda sunt, aut in certitudine sua, aut per aestimativas, aut per comparativas, prout dabitur copia.

XLVI.

Inter praerogativas instantiarum ponemus loco vicesimo secundo Instantias Curriculi, quas etiam Instantias ad Aquam appellare consuevimus; sumpto vocabulo a clepsydris apud antiquos, in quas infundebatur aqua, loco arenae. Eae mensurant naturam per momenta temporis, quemadmodum Instantiae Virgae per gradus spatii. Omnis enim motus sive actio naturalis transigitur in tempore; alius velocius, alius tardius, sed utcunque momentis certis et naturae notis. Etiam illae actiones quae subito videntur operari, et in ictu oculi (ut loquimur), deprehenduntur recipere majus et minus quoad tempus.

Primo itaque videmus restitutiones corporum coelestium fieri per tempora numerata; etiam fluxus et refluxus maris. Latio autem gravium versus terram et levium versus ambitum coeli fit per certa momenta, pro ratione corporis quod fertur, et medii. At velificationes navium, motus animalium, perlationes missilium, omnes fiunt itidem per tempora (quantum ad summas) numerabilia. Calorem vero quod attinet, videmus pueros per hyemem manus in flamma lavare, nec tamen uri; et joculatores vasa plena vino vel aqua, per motus agiles et aequales, vertere deorsum et sursum recuperare, non effuso liquore; et multa hujusmodi. Nec minus ipsae compressiones et dilatationes et eruptiones corporum fiunt, aliae velocius, aliae tardius, pro natura corporis et motus, sed per momenta certa. Quinetiam in explosione plurium bombardarum simul, quae exaudiuntur quandoque ad distantiam triginta milliarium, percipitur sonus prius

ab iis qui prope absunt a loco ubi fit sonitus, quam ab iis qui longe. At in visu (cujus actio est pernicissima) liquet etiam requiri ad eum actuandum momenta certa temporis: idque probatur ex iis quae propter motus velocitatem non cernuntur; ut ex latione pilae ex sclopeto. Velocior enim est praetervolatio pilae quam impressio speciei ejus quae deferri poterat ad visum.

Atque hoc, cum similibus, nobis quandoque dubitationem peperit plane monstrosam: videlicet, utrum coeli sereni et stellati facies ad idem tempus cernatur quando vere existit, an potius aliquanto post; et utrum non sit (quatenus ad visum coelestium) non minus tempus verum et tempus visum, quam locus verus et locus visus, qui notatur ab astronomis in parallaxibus. Adeo incredibile nobis videbatur, species sive radios corporum coelestium per tam immensa spatia milliarium subito deferri posse ad visum; sed potius debere eas in tempore aliquo notabili delabi. Verum illa dubitatio (quoad majus aliquod intervallum temporis inter tempus verum et visum) postea plane evanuit: reputantibus nobis jacturam illam infinitam et diminutionem quanti, quatenus ad apparentiam, inter corpus stellae verum et speciem visam, quae causatur a distantia; atque simul notantibus ad quantam distantiam (sexaginta scilicet ad minimum milliariorum) corpora, eaque tantum albicantia, subito hic apud nos cernantur; cum dubium non sit lucem coelestium, non tantum albedinis vividum colorem, verum etiam omnis flammae (quae apud nos nota est) lucem, quoad vigorem radiationis, multis partibus excedere. Etiam immensa illa velocitas in ipso corpore, quae cernitur in motu diurno (quae etiam viros graves ita obstupefecit ut mallent credere motum terrae), facit motum illum ejaculationis radiorum ab ipsis (licet celeritate, ut diximus, mirabilem) magis credibilem. Maxime vero omnium nos movit, quod si interponeretur intervallum temporis aliquod notabile inter veritatem et visum, foret ut species per nubes interim orientes et similes medii perturbationes interciperentur saepenumero, et confunderentur. Atque de mensuris temporum simplicibus haec dicta sint.

Verum non solum quaerenda est mensura motuum et actionum simpliciter, sed multo magis comparative: id enim eximii est usus, et ad plurima spectat. Atque videmus flammam alicujus tormenti ignei citius cerni, quam sonitus audiatur; licet necesse sit pilam prius aerem percutere, quam flammae quae pone erat cujus

licet necesse sit pilam prius aerem percutere, quam flamma quae pone erat exire potuerit; fieri hoc autem propter velociorem transactionem motus lucis, quam soni. Videmus etiam species visibiles a visu citius excipi quam dimitti; unde fit quod nervi fidium, digito impulsi, duplicentur aut triplicentur quoad speciem, quia species nova recipitur, antequam prior demittatur; ex quo etiam fit, ut annuli rotati videantur globosi, et fax ardens, noctu velociter portata, conspiciatur caudata. Etiam ex hoc fundamento inaequalitatis motuum quoad velocitatem, excogitavit Galilaeus causam fluxus et refluxus maris; rotante terra velocius, aquis tardius; ideoque accumulantibus se aquis in sursum, et deinde per vices se remittentibus in deorsum, ut demonstratur in vase aquae incitatius movente. Sed hoc commentus est concesso non concessibili (quod terra nempe moveatur), ac etiam non bene informatus de oceani motu sexhorario.

At exemplum hujus rei de qua agitur, videlicet, de comparativis mensuris motuum, neque solum rei ipsius, sed et usus insignis ejus (de quo paulo ante loquuti sumus), eminet in cuniculis subterraneis, in quibus collocatur pulvis pyrius; ubi immensae moles terrae, aedificiorum, et similium, subvertuntur, et in altum jaciuntur, a pusilla quantitate pulveris pyrii. Cujus causa pro certo illa est, quod motus dilatationis pulveris, qui impellit, multis partibus sit pernicior, quam motus gravitatis per quem fieri possit aliqua resistentia; adeo ut primus motus perfunctus sit, antequam motus adversus inceperit; ut in principiis nullitas quaedam sit resistentiae. Hinc etiam fit, quod in omni missili, ictus, non tam robustus quam acutus et celer, ad perlationem potissimum valeat. Neque etiam fieri potuisset, ut parva quantitas spiritus animalis in animalibus, praesertim in tam vastis corporibus qualia sunt balaenae aut elephanti, tantam molem corpoream flecteret et regeret, nisi propter velocitatem motus spiritus, et hebetudinem corporeae molis, quatenus ad expediendam suam resistentiam.

Denique, hoc unum ex praecipuis fundamentis est experimentorum magicorum, de quibus mox dicemus; ubi scilicet parva moles materiae longe majorem superat et in ordinem redigit: hoc, inquam, si fieri possit anteversio motuum per velocitatem unius, antequam alter se expediat.

Postremo, hoc ipsum Prius et Posterius in omni actione naturali notari debet; veluti quod in infusione rhabarbari eligatur purgativa vis prius, astrictiva post;

veluti quod in infusione rhabarbari efficiatur purgativa vis prius, astrictiva post; simile quiddam etiam in infusione violarum in acetum experti sumus; ubi primo excipitur suavis et delicatus floris odor; post, pars floris magis terrea, quae odorem confundit. Itaque si infundantur violae per diem integrum, odor multo languidius excipitur: quod si infundantur per partem quartam horae tantum, et extrahantur; et (quia paucus est spiritus odoratus qui subsistit in viola) infundantur post singulas quartas horae violae novae et recentes ad sexies; tum demum nobilitatur infusio, ita ut licet non manserint violae, utcunque renovatae, plus quam ad sesquihoram, tamen permanserit odor gratissimus, et viola ipsa non inferior, ad annum integrum. Notandum tamen est, quod non se colligat odor ad vires suas plenas, nisi post mensem ab infusione. In distillationibus vero aromatum maceratorum in spiritu vini patet quod surgat primo phlegma aqueum et inutile, deinde aqua plus habens ex spiritu vini, deinde post aqua plus habens ex aromate. Atque hujus generis quamplurima inveniuntur in distillationibus notatu digna. Verum haec sufficiant ad exempla.

XLVII.

Inter praerogativas instantiarum ponemus loco vicesimo tertio Instantias Quanti, quas etiam Doses Naturae (sumpto vocabulo a Medicinis) vocare consuevimus. Eae sunt quae mensurant virtutes per Quanta corporum, et indicant quid Quantum Corporis faciat ad Modum Virtutis. Ac primo sunt quaedam virtutes quae non subsistunt nisi in quanto cosmico, hoc est, tali quanto quod habeat consensum cum configuratione et fabrica universi. Terra enim stat; partes ejus cadunt. Aquae in maribus fluunt et refluunt; in fluviis minime, nisi per ingressum maris. Deinde etiam omnes fere virtutes particulares secundum multum aut parvum corporis operantur. Aquae largae non facile corrumpuntur; exiguae cito. Mustum et cervisia maturescunt longe citius, et fiunt potabilia, in utribus parvis, quam in doliis magnis. Si herba ponatur in majore portione liquoris, fit infusio, magis quam imbibitio; si in minore, fit imbibitio, magis quam infusio. Aliud igitur erga corpus humanum est balneum, aliud levis irroratio. Etiam parvi rores in aere nunquam cadunt, sed dissipantur et cum aere

incorporantur. Et videre est in anhelitu super gemmas, parum illud humoris, quasi nubeculam vento dissipatam, continuo solvi. Etiam frustum ejusdem magnetis non trahit tantum ferri, quantum magnes integer. Sunt etiam virtutes in quibus parvitas quanti magis potest; ut in penetrationibus, stylus acutus citius penetrat, quam obtusus; adamas punctuatus sculpit in vitro; et similia.
Verum non hic morandum est in indefinitis, sed etiam de rationibus quanti corporis erga modum virtutis inquirendum. Proclive enim foret credere, quod rationes quanti rationes virtutis adaequarent; ut si pila plumbea unius unciae caderet in tali tempore, pila unciarum duarum deberet cadere duplo celerius, quod falsissimum est. Nec eaedem rationes in omni genere virtutum valent, sed longe diversae. Itaque hae mensurae ex rebus ipsis petendae sunt, et non ex verisimilitudine aut conjecturis.
Denique in omni inquisitione naturae Quantum corporis requiratur ad aliquod effectum, tanquam dosis, notandum; et cautiones de Nimis et Parum aspergendae.

XLVIII.

Inter praerogativas instantiarum ponemus loco vicesimo quarto Instantias Luctae; quas etiam Instantias Praedominantiae appellare consuevimus. Eae indicant praedominantiam et cessionem virtutum ad invicem; et quae ex illis sit fortior et vincat, quae infirmior et succumbat. Sunt enim motus et nixus corporum compositi, decompositi, et complicati, non minus quam corpora ipsa. Proponemus igitur primum species praecipuas motuum sive virtutum activarum; ut magis perspicua sit ipsarum comparatio in robore, et exinde demonstratio atque designatio instantiarum luctae et praedominantiae.

1. Motus Primus sit Motus Antitypiae materiae, quae inest in singulis portionibus ejus; per quem plane annihilari non vult: ita ut nullum incendium, nullum pondus aut depressio, nulla violentia, nulla denique aetas aut diuturnitas temporis possit redigere aliquam vel minimam portionem materiae in nihilum; quin illa et sit aliquid, et loci aliquid occupet, et se (in qualicunque necessitate

ponatur), vel formam mutando vel locum, liberet, vel (si non detur copia) ut est subsistat; neque unquam res eo deveniat, ut aut nihil sit, aut nullibi. Quem motum Schola (quae semper fere et denominat et definit res potius per effectus et incommoda quam per causas interiores) vel denotat per illud axioma, quod Duo corpora non possint esse in uno loco; vel vocat motum Ne fiat penetratio dimensionum. Neque hujus motus exempla proponi consentaneum est: inest enim omni corpori.

2. Sit Motus Secundus, Motus (quem appellamus) Nexus; per quem corpora non patiuntur se ulla ex parte sui dirimi a contactu alterius corporis, ut quae mutuo nexu et contactu gaudeant. Quem motum Schola vocat Motum Ne detur vacuum: veluti cum aqua attrahitur sursum exuctione, aut per fistulas; caro per ventosas; aut cum aqua sistitur nec effluit in hydriis perforatis, nisi os hydriae ad immittendum aerem aperiatur; et innumera id genus.

3. Sit Motus Tertius, Motus (quem appellamus) Libertatis; per quem corpora se liberare nituntur a pressura aut tensura praeter-naturali, et restituere se in dimensum corpori suo conveniens. Cujus motus etiam innumera sunt exempla: veluti (quatenus ad liberationem a pressura) aquae in natando, aeris in volando; aquae in remigando, aeris in undulationibus ventorum; laminae in horologiis. Nec ineleganter se ostendit motus aeris compressi in sclopettis ludicris puerorum, cum alnum aut simile quiddam excavant, et infarciunt frusto alicujus radicis succulentae, vel similium, ad utrosque fines; deinde per embolum trudunt radicem vel hujusmodi farcimentum in foramen alterum; unde emittitur et ejicitur radix cum sonitu ad foramen alterum, idque antequam tangatur a radice aut farcimento citimo, aut embolo. Quatenus vero ad liberationem a tensura, ostendit se hic motus in aere post exuctionem in ovis vitreis remanente, in chordis, in corio, et panno, resilientibus post tensuras suas, nisi tensurae illae per moram invaluerint, *etc.* Atque hunc motum Schola sub nomine Motus ex Forma Elementi innuit: satis quidem inscite, cum hic motus non tantum ad aerem, aquam, aut flammam pertineat, sed ad omnem diversitatem consistentiae; ut ligni, ferri, plumbi, panni, membranae, etc., in quibus singula corpora suae habent dimensionis modulum, et ab eo aegre ad spatium aliquod notabile

abripiuntur. Verum quia motus iste libertatis omnium est maxime obvius, et ad infinita spectans, consultum fuerit eum bene et perspicue distinguere. Quidam enim valde negligenter confundunt hunc motum cum gemino illo motu antitypiae et nexus; liberationem scilicet a pressura, cum motu antitypiae; a tensura, cum motu nexus; ac si ideo cederent aut se dilatarent corpora compressa, ne sequeretur penetratio dimensionum; ideo resilirent et contraherent se corpora tensa, ne sequeretur vacuum. Atqui si aer compressus se vellet recipere in densitatem aquae, aut lignum in densitatem lapidis, nil opus foret penetratione dimensionum; et nihilominus longe major posset esse compressio illorum, quam illa ullo modo patiuntur. Eodem modo si aqua se dilatare vellet in raritatem aeris, aut lapis in raritatem ligni, non opus foret vacuo; et tamen longe major posset fieri extensio eorum, quam illa ullo modo patiuntur. Itaque non reducitur res ad penetrationem dimensionum et vacuum, nisi in ultimitatibus condensationis et rarefactionis; cum tamen isti motus longe citra eas sistant et versentur, neque aliud sint quam desideria corporum conservandi se in consistentiis suis (sive, si malint, in formis suis), nec ab iis recedendi subito, nisi per modos suaves ac per consensum alterentur. At longe magis necessarium est (quia multa secum trahit), ut intimetur hominibus, motum violentum (quem nos mechanicum, Democritus, qui in motibus suis primis expediendis etiam infra mediocres philosophos ponendus est, motum plagae vocavit) nil aliud esse quam Motum Libertatis, scilicet a compressione ad relaxationem. Etenim in omni sive simplici protrusione sive volatu per aerem, non fit summotio aut latio localis, antequam partes corporis praeter-naturaliter patiantur et comprimantur ab impellente. Tum vero partibus aliis alias per successionem trudentibus, fertur totum; nec solum progrediendo, sed etiam rotando simul; ut etiam hoc modo partes se liberare, aut magis ex aequo tolerare possint. Atque de hoc motu hactenus.

4. Sit Motus Quartus, motus cui nomen dedimus Motus Hyles: qui motus antistrophus est quodammodo Motui, de quo diximus, Libertatis. Etenim in Motu Libertatis, corpora novum dimensum sive novam sphaeram sive novam dilatationem aut contractionem (haec enim verborum varietas idem innuit)

exhorrent, respuunt, fugiunt, et resilire ac veterem consistentiam recuperare totis viribus contendunt. At contra in hoc Motu Hyles, corpora novam sphaeram sive dimensum appetunt; atque ad illud libenter et propere, et quandoque valentissimo nixu (ut in pulvere pyrio) aspirant. Instrumenta autem hujus motus, non sola certe, sed potentissima, aut saltem frequentissima, sunt calor et frigus. Exempli gratia: aer, si per tensuram (velut per exuctionem in ovis vitreis) dilatetur, magno laboret desiderio seipsum restituendi. At admoto calore, e contra appetit dilatari, et concupiscet novam sphaeram, et transit et migrat in illam libenter, tanquam in novam formam (ut loquuntur); nec post dilatationem nonnullam de reditu curat, nisi per admotionem frigidi ad eam invitetur; quae non reditus est, sed transmutatio repetita. Eodem modo et aqua, si per compressionem arctetur, recalcitrat; et vult fieri qualis fuit, scilicet latior. At si interveniat frigus intensum et continuatum, mutat se sponte sua et libenter in condensationem glaciei; atque si plane continuetur frigus, nec a teporibus interrumpatur (ut fit in speluncis et cavernis paulo profundioribus), vertitur in crystallum aut materiam similem, nec unquam restituitur.

5. Sit Motus Quintus, Motus Continuationis. Intelligimus autem non continuationis simplicis et primariae, cum corpore aliquo altero (nam ille est Motus Nexus); sed continuationis sui, in corpore certo. Certissimum enim est, quod corpora omnia solutionem continuitatis exhorreant; alia magis, alia minus, sed omnia aliquatenus. Nam ut in corporibus duris (veluti chalybis, vitri) reluctatio contra discontinuationem est maxime robusta et valida, ita etiam in liquoribus, ubi cessare aut languere saltem videtur motus ejusmodi, tamen non prorsus reperitur privatio ejus; sed plane inest ipsis in gradu tanquam infimo, et prodit se in experimentis plurimis; sicut in bullis, in rotunditate guttarum, in filis tenuioribus stillicidiorum, et in sequacitate corporum glutinosorum, et ejusmodi. Sed maxime omnium se ostendit appetitus iste, si discontinuatio tentetur usque ad fractiones minores. Nam in mortariis, post contusionem ad certum gradum, non amplius operatur pistillum; aqua non subintrat rimas minores; quin et ipse aer, non obstante subtilitate corporis ipsius, poros vasorum paulo solidiorum non pertransit subito, nec nisi per diuturnam insinuationem.

6. Sit Motus Sextus, motus quem nominamus Motum ad Lucrum, sive Motum Indigentiae. Is est, per quem corpora, quando versantur inter plane heterogenea et quasi inimica, si forte nanciscantur copiam aut commoditatem evitandi illa heterogenea et se applicandi ad magis cognata, (licet illa ipsa cognata talia fuerint quae non habeant arctum consensum cum ipsis) tamen statim ea amplectuntur, et tanquam potiora malunt: et lucri loco (unde vocabulum sumpsimus) hoc ponere videntur, tanquam talium corporum indiga. Exempli gratia: aurum, aut aliud metallum foliatum non delectatur aere circumfuso. Itaque si corpus aliquod tangibile et crassum nanciscatur (ut digitum, papyrum, quidvis aliud), adhaeret statim, nec facile divellitur. Etiam papyrus, aut pannus, et hujusmodi, non bene se habent cum aere qui inseritur et commistus est in ipsorum poris. Itaque aquam aut liquorem libenter imbibunt, et aerem exterminant. Etiam saccharum, aut spongia infusa in aquam aut vinum, licet pars ipsorum emineat et longe attollatur supra vinum aut aquam, tamen aquam aut vinum paulatim et per gradus attrahunt in sursum.
Unde optimus canon sumitur aperturae et solutionum corporum. Missis enim corrosivis et aquis fortibus, quae viam sibi aperiunt, si possit inveniri corpus proportionatum et magis consentiens et amicum corpori alicui solido quam illud cum quo tanquam per necessitatem commiscetur, statim se aperit et relaxat corpus, et illud alterum intro recipit, priore excluso aut summoto. Neque operatur aut potest iste motus ad lucrum solummodo ad tactum. Nam electrica operatio (de qua Gilbertus et alii post eum tantas excitarunt fabulas) non alia est quam corporis per fricationem levem excitati appetitus; qui aerem non bene tolerat, sed aliud tangibile mavult, si reperiatur in propinquo.

7. Sit motus Septimus, Motus (quem appellamus) Congregationis Majoris; per quem corpora feruntur ad massas connaturalium suorum: gravia, ad globum terrae; levia, ad ambitum coeli. Hunc Schola nomine Motus Naturalis insignivit: levi contemplatione, quia scilicet nil spectabile erat ab extra quod eum motum cieret (itaque rebus ipsis innatum atque insitum putavit); aut forte quia non cessat. Nec mirum: semper enim praesto sunt coelum et terra; cum e contra

causae et origines plurimorum ex reliquis motibus interdum absint, interdum adsint. Itaque hunc, quia non intermittit sed caeteris intermittentibus statim occurrit, perpetuum et proprium; reliquos ascititios posuit. Est autem iste motus revera satis infirmus et hebes, tanquam is qui (nisi sit moles corporis major) caeteris motibus, quamdiu operantur, cedat et succumbat. Atque cum hic motus hominum cogitationes ita impleverit ut fere reliquos motus occultaverit, tamen parum est quod homines de eo sciunt, sed in multis circa illum erroribus versantur.

8. Sit Motus Octavus, Motus Congregationis Minoris; per quem partes homogeneae in corpore aliquo separant se ab heterogeneis, et coeunt inter sese; per quem etiam corpora integra ex similitudine substantiae se amplectuntur et fovent, et quandoque ad distantiam aliquam congregantur, attrahuntur, et conveniunt: veluti cum in lacte flos lactis post moram aliquam supernatat; in vino faeces et tartarum subsidunt. Neque enim haec fiunt per motum gravitatis et levitatis tantum, ut aliae partes summitatem petant, aliae ad imum vergant; sed multo magis per desiderium homogeneorum inter se coeundi et se uniendi.
Differt autem iste motus a motu indigentiae, in duobus. Uno, quod in motu indigentiae sit stimulus major naturae malignae et contrariae; at in hoc motu (si modo impedimenta et vincula absint) uniuntur partes per amicitiam, licet absit natura aliena quae litem moveat: altero, quod arctior sit unio, et tanquam majore cum delectu. In illo enim, modo evitetur corpus inimicum, corpora etiam non admodum cognata concurrunt; at in hoc coeunt substantiae, germana plane similitudine devinctae, et conflantur tanquam in unum. Atque hic motus omnibus corporibus compositis inest; et se facile conspiciendum in singulis daret, nisi ligaretur et fraenaretur per alios corporum appetitus et necessitates, quae istam coitionem disturbant.
Ligatur autem motus iste plerumque tribus modis: torpore corporum; fraeno corporis dominantis; et motu externo. Ad torporem corporum quod attinet; certum est inesse corporibus tangibilibus pigritiam quandam secundum magis et minus, et exhorrentiam motus localis; ut, nisi excitentur, malint statu suo (prout

sunt) esse contenta quam in melius se expedire. Discutitur autem iste torpor triplici auxilio: aut per calorem, aut per virtutem alicujus cognati corporis eminentem, aut per motum vividum et potentem. Atque primo quoad auxilium caloris; hinc fit, quod calor pronuntietur esse illud quod separet heterogenea, congreget homogenea. Quam definitionem Peripateticorum merito derisit Gilbertus; dicens eam esse perinde ac si quis diceret ac definiret hominem illud esse quod serat triticum et plantet vineas: esse enim definitionem tantum per effectus, eosque particulares. Sed adhuc magis culpanda est illa definitio; quia etiam effectus illi (quales quales sunt) non sunt ex proprietate caloris, sed tantum per accidens (idem enim facit frigus, ut postea dicemus), nempe ex desiderio partium homogenearum coeundi, adjuvante tantum calore ad discutiendum torporem, qui torpor desiderium illud antea ligaverat. Quoad vero auxilium virtutis inditae a corpore cognato; illud mirabiliter elucescit in magnete armato, qui excitat in ferro virtutem detinendi ferrum per similitudinem substantiae, discusso torpore ferri per virtutem magnetis. Quoad vero auxilium motus; conspicitur illud in sagittis ligneis, cuspide etiam lignea, quae altius penetrant in alia ligna quam si fuissent armatae ferro, per similitudinem substantiae, discusso torpore ligni per motum celerem: de quibus duobus experimentis etiam in aphorismo de instantiis clandestinis diximus.

Ligatio vero motus congregationis minoris, quae fit per fraenum corporis dominantis, conspicitur in solutione sanguinis et urinarum per frigus. Quamdiu enim repleta fuerint corpora illa spiritu agili, qui singulas eorum partes cujuscunque generis ipse ut dominus totius ordinat et cohibet, tamdiu non coeunt heterogenea propter fraenum; sed postquam ille spiritus evaporaverit, aut suffocatus fuerit per frigus, tum solutae partes a fraeno coeunt secundum desiderium suum naturale. Atque ideo fit, ut omnia corpora quae continent spiritum acrem (ut sales, et hujusmodi) durent et non solvantur, ob fraenum permanens et durabile spiritus dominantis et imperiosi.

Ligatio vero motus congregationis minoris, quae fit per motum externum, maxime conspicitur in agitationibus corporum per quas arcetur putrefactio. Omnis enim putrefactio fundatur in congregatione homogeneorum; unde

paulatim fit corruptio prioris (quam vocant) formae, et generatio novae. Nam putrefactionem, quae sternit viam ad generationem novae formae, praecedit solutio veteris; quae est ipsa coitio ad homogeniam. Ea vero, si non impedita fuerit, fit solutio simplex: sin occurrant varia quae obstant, sequuntur putrefactiones quae sunt rudimenta generationis novae. Quod si (id quod nunc agitur) fiat agitatio frequens per motum externum, tum vero motus iste coitionis (qui est delicatus et mollis et indiget quiete ab externis) disturbatur et cessat; ut fieri videmus in innumeris: veluti cum quotidiana agitatio aut profluentia aquae arceat putrefactionem; venti arceant pestilentiam aeris; grana in granariis versa et agitata maneant pura; omnia denique agitata exterius non facile putrefiant interius.

Superest ut non omittatur coitio illa partium corporum, unde fit praecipue induratio et desiccatio. Postquam enim spiritus, aut humidum in spiritum versum, evolaverit in aliquo corpore porosiore (ut in ligno, osse, membrana, et hujusmodi), tum partes crassiores majore nixu contrahuntur et coeunt, unde sequitur induratio aut desiccatio: quod existimamus fieri, non tam ob motum nexus, ne detur vacuum, quam per motum istum amicitiae et unionis.

Ad coitionem vero ad distans quod attinet, ea infrequens est et rara; et tamen in pluribus inest quam quibus observatur. Hujus simulacra sunt, cum bulla solvat bullam; medicamenta ex similitudine substantiae trahant humores; chorda in diversis fidibus ad unisonum moveat chordam; et hujusmodi. Etiam in spiritibus animalium hunc motum vigere existimamus, sed plane incognitum. At eminet certe in magnete, et ferro excito. Cum autem de motibus magnetis loquimur, distinguendi plane sunt. Quatuor enim virtutes sive operationes sunt in magnete, quae non confundi, sed separari debent; licet admiratio hominum et stupor eas commiscuerit. Una, coitionis magnetis ad magnetem, vel ferri ad magnetem, vel ferri exciti ad ferrum. Secunda, verticitatis ejus ad septentriones et austrum, atque simul declinationis ejus. Tertia, penetrationis ejus per aurum, vitrum, lapidem, omnia. Quarta, communicationis virtutis ejus de lapide in ferrum, et de ferro in ferrum, absque communicatione substantiae. Verum hoc loco de prima virtute ejus tantum loquimur, videlicet coitionis. Insignis etiam est motus coitionis argenti vivi et auri; adeo ut aurum alliciat argentum vivum, licet

coitionis argenti vivi et auri: adeo ut aurum afficiat argentum vivum, licet confectum in unguenta; atque operarii inter vapores argenti vivi soleant tenere in ore frustum auri, ad colligendas emissiones argenti vivi, alias crania et ossa eorum invasuras; unde etiam frustum illud paulo post albescit. Atque de motu congregationis minoris haec dicta sint.

9. Sit Motus Nonus, Motus Magneticus; qui licet sit ex genere motus congregationis minoris, tamen si operetur ad distantias magnas et super massas rerum magnas, inquisitionem meretur separatam; praesertim si nec incipiat a tactu, quemadmodum plurimi, nec perducat actionem ad tactum, quemadmodum omnes motus congregativi; sed corpora tantum elevet, aut ea intumescere faciat, nec quicquam ultra. Nam si luna attollat aquas, aut turgescere aut intumescere faciat humida; aut coelum stellatum attrahat planetas versus sua apogaea; aut sol alliget astra Veneris et Mercurii, ne longius absint a corpore ejus quam ad distantiam certam; videntur hi motus nec sub congregatione majore nec sub congregatione minore bene collocari, sed esse tanquam congregativa media et imperfecta, ideoque speciem debere constituere propriam.

10. Sit Motus Decimus, Motus Fugae; motus scilicet motui congregationis minoris contrarius; per quem corpora ex antipathia fugiunt et fugant inimica, seque ab illis separant, aut cum illis miscere se recusant. Quamvis enim videri possit in aliquibus hic motus esse motus tantum per accidens aut per consequens, respectu motus congregationis minoris, quia nequeunt coire homogenea, nisi heterogeneis exclusis et remotis; tamen ponendus est motus iste per se, et in speciem constituendus, quia in multis appetitus fugae cernitur magis principalis quam appetitus coitionis.
Eminet autem hic motus insigniter in excretionibus animalium; nec minus etiam in sensuum nonnullorum odiosis objectis, praecipue in olfactu et gustu. Odor enim foetidus ita rejicitur ab olfactu, ut etiam inducat in os stomachi motum expulsionis per consensum; sapor amarus et horridus ita rejicitur a palato aut gutture, ut inducat per consensum capitis conquassationem et horrorem. Veruntamen etiam in aliis locum habet iste motus. Conspicitur enim in

antiperistasibus nonnullis; ut in aeris media regione, cujus frigora videntur esse rejectiones naturae frigidae ex confiniis coelestium; quemadmodum etiam videntur magni illi fervores et inflammationes, quae inveniuntur in locis subterraneis, esse rejectiones naturae calidae ab interioribus terrae. Calor enim et frigus, si fuerint in quanto minore, se invicem perimunt; sin fuerint in massis majoribus et tanquam justis exercitibus, tum vero per conflictum se locis invicem summovent et ejiciunt. Etiam tradunt cinamomum et odorifera, sita juxta latrinas et loca foetida, diutius odorem retinere; quia recusant exire et commisceri cum foetidis. Certe argentum vivum, quod alias se reuniret in corpus integrum, prohibetur per salivam hominis, aut axungiam porci, aut terebinthinam, et hujusmodi, ne partes ejus coeant; propter malum consensum quem habent cum hujusmodi corporibus; a quibus undique circumfusis se retrahunt; adeo ut fortior sit earum fuga ab istis interjacentibus quam desiderium uniendi se cum partibus sui similibus; id quod vocant mortificationem argenti vivi. Etiam quod oleum cum aqua non misceatur, non tantum in causa est differentia levitatis, sed malus ipsorum consensus: ut videre est in spiritu vini, qui cum levior sit oleo, tamen se bene miscet cum aqua. At maxime omnium insignis est motus fugae in nitro, et hujusmodi corporibus crudis, quae flammam exhorrent; ut in pulvere pyrio, argento vivo, necnon in auro. Fuga vero ferri ab altero polo magnetis a Gilberto bene notatur non esse fuga propria, sed conformitas, et coitio ad situm magis accommodatum.

11. Sit Motus Undecimus, Motus Assimilationis, sive Multiplicationis sui, sive etiam Generationis Simplicis. Generationem autem simplicem dicimus non corporum integralium, ut in plantis, aut animalibus; sed corporum similarium. Nempe per hunc motum corpora similaria vertunt corpora alia affinia, aut saltem bene disposita et praeparata, in substantiam et naturam suam: ut flamma, quae super halitus et oleosa multiplicat se, et generat novam flammam; aer, qui super aquam et aquea multiplicat se, et generat novum aerum; spiritus vegetabilis et animalis, qui super tenuiores partes tam aquei quam oleosi in alimentis suis multiplicat se, et generat novum spiritum; partes solidae plantarum et animalium,

veluti folium, flos, caro, os, et sic de caeteris, quae singulae ex succis alimentorum assimilant et generant substantiam successivam et epiusiam. Neque enim quenquam cum Paracelso delirare juvet, qui (distillationibus suis scilicet occaecatus) nutritionem per separationem tantum fieri voluit; quodque in pane vel cibo lateat oculus, nasus cerebrum, jecur; in succo terrae radix, folium, flos. Etenim sicut faber ex rudi massa lapidis vel ligni, per separationem et rejectionem superflui, educit folium, florem, oculum, nasum, manum, pedem, et similia; ita Archaeum illum Fabrum internum ex alimento per separationem et rejectionem educere singula membra et partes asserit ille. Verum missis nugis, certissimum est partes singulas, tam similares quam organicas, in vegetabilibus et animalibus, succos alimentorum suorum fere communes, aut non multum diversos, primo attrahere cum nonnullo delectu, deinde assimilare, et vertere in naturam suam. Neque assimilatio ista, aut generatio simplex, fit solum in corporibus animatis, verum et inanimata ex hac re participant; veluti de flamma et aere dictum est. Quinetiam spiritus emortuus, qui in omni tangibili animato continetur, id perpetuo agit, ut partes crassiores digerat et vertat in spiritum, qui deinde exeat; unde fit diminutio ponderis et exsiccatio, ut alibi diximus. Neque etiam respuenda est in assimilatione accretio illa, quam vulgo ab alimentatione distinguunt; veluti cum lutum inter lapillos concrescit, et vertitur in materiam lapideam; squammae circa dentes vertuntur in substantiam non minus duram quam sunt dentes ipsi, *etc.* Sumus enim in ea opinione, inesse corporibus omnibus desiderium assimilandi, non minus quam coeundi ad homogenea; verum ligatur ista virtus, sicut et illa, licet non iisdem modis. Sed modos illos, necnon solutionem ab iisdem, omni diligentia inquirere oportet, quia pertinent ad senectutis refocillationem. Postremo videtur notatu dignum, quod in novem illis motibus, de quibus diximus, corpora tantum naturae suae conservationem appetere videntur; in hoc decimo autem propagationem.

12. Sit Motus Duodecimus, Motus Excitationis; qui motus videtur esse ex genere assimilationis, atque eo nomine quandoque a nobis promiscue vocatur. Est enim motus diffusivus, et communicativus, et transitivus, et multiplicativus, sicut et ille; atque effectu (ut plurimum) consentiunt, licet efficiendi modo et

subjecto differant. Motus enim assimilationis procedit tanquam cum imperio et potestate; jubet enim et cogit assimilatum in assimilantem verti et mutari. At motus excitationis procedit tanquam arte et insinuatione et furtim; et invitat tantum, et disponit excitatum ad naturam excitantis. Etiam motus assimilationis multiplicat et transformat corpora et substantias; veluti, plus fit flammae, plus aeris, plus spiritus, plus carnis. At in motu excitationis, multiplicantur et transeunt virtutes tantum; et plus fit calidi, plus magnetici, plus putridi. Eminet autem iste motus praecipue in calido et frigido. Neque enim calor diffundit se in calefaciendo per communicationem primi caloris; sed tantum per excitationem partium corporis ad motum illum qui est Forma Calidi; de quo in vindemiatione prima de natura calidi diximus. Itaque longe tardius et difficilius excitatur calor in lapide aut metallo quam in aere, ob inhabilitatem et impromptitudinem corporum illorum ad motum illum; ita ut verisimile sit posse esse interius versus viscera terrae materias quae calefieri prorsus respuant; quia ob condensationem majorem spiritu illo destituuntur a quo motus iste excitationis plerunque incipit. Similiter magnes induit ferrum nova partium dispositione et motu conformi; ipse autem nihil ex virtute perdit. Similiter fermentum panis, et flos cervisiae, et coagulum lactis, et nonnulla ex venenis, excitant et invitant motum in massa farinaria, aut cervisia, aut caseo, aut corpore humano, successivum et continuatum; non tam ex vi excitantis quam ex praedispositione et facili cessione excitati.

13. Sit Motus Decimus Tertius, Motus Impressionis; qui motus est etiam ex genere motus assimilationis, estque ex diffusivis motibus subtilissimus. Nobis autem visum est eum in speciem propriam constituere, propter differentiam insignem quam habet erga priores duos. Motus enim assimilationis simplex corpora ipsa transformat; ita ut si tollas primum movens nihil intersit ad ea quae sequuntur. Neque enim prima accensio in flammam, aut prima versio in aerem, aliquid facit ad flammam aut aerem in generatione succedentem. Similiter, motus excitationis omnino manet, remoto primo movente, ad tempora bene diuturna; ut in corpore calefacto, remoto primo calore; in ferro excito, remoto magnete; in massa farinaria, remoto fermento. At Motus Impressionis, licet sit

diffusivus, et transitivus, tamen perpetuo pendere videtur ex primo movente; adeo ut, sublato aut cessante illo, statim deficiat et pereat; itaque etiam momento, aut saltem exiguo tempore, transigitur. Quare motus illos assimilationis et excitationis, motus generationis Jovis, quia generatio manet; hunc autem motum Motum Generationis Saturni, quia natus statim devoratur et absorbetur, appellare consuevimus. Manifestat se vero hic motus in tribus; in lucis radiis; sonorum percussionibus; et magneticis, quatenus ad communicationem. Etenim amota luce, statim pereunt colores et reliquae imagines ejus; amota percussione prima et quassatione corporis inde facta, paulo post perit sonus. Licet enim soni etiam in medio per ventos tanquam per undas agitentur; tamen diligentius notandum est, quod sonus non tam diu durat quam fit resonatio. Etenim impulsa campana, sonus ad bene magnum tempus continuari videtur; unde quis facile in errorem labatur, si existimet toto illo tempore sonum tanquam natare et haerere in aere; quod falsissimum est. Etenim illa resonatio non est idem sonus numero, sed renovatur. Hoc autem manifestatur ex sedatione sive cohibitione corporis percussi. Si enim sistatur et detineatur campana fortiter et fiat immobilis, statim perit sonus nec resonat amplius; ut in chordis, si post primam percussionem tangatur chorda, vel digito ut in lyra, vel calamo ut in espinetis, statim desinit resonatio. Magnete autem remoto, statim ferrum decidit. Luna autem a mari non potest removeri; nec terra a ponderoso dum cadit. Itaque de illis nullum fieri potest experimentum; sed ratio eadem est.

14. Sit Motus Decimus Quartus, Motus Configurationis, aut Situs; per quem corpora appetere videntur, non coitionem aut separationem aliquam, sed situm, et collocationem, et configurationem cum aliis. Est autem iste motus valde abstrusus, nec bene inquisitus. Atque in quibusdam videtur quasi incausabilis; licet revera (ut existimamus) non ita sit. Etenim si quaeratur cur potius coelum volvatur ab oriente in occidentem quam ab occidente in orientem; aut cur vertatur circa polos positos juxta Ursas potius quam circa Orionem, aut ex alia aliqua parte coeli: videtur ista quaestio tanquam quaedam extasis, cum ista potius ab experientia, et ut positiva recipi debeant. At in natura profecto sunt quaedam ultima et incausabilia; verum hoc ex illis non esse videtur. Etenim hoc fieri existimamus ex quadam harmonia et consensu mundi, qui adhuc non venit in observationem. Quod si recipiatur motus terrae ab occidente in orientem, eaedem manent quaestiones. Nam et ipsa super aliquos polos movetur. Atque cur tandem debeant isti poli collocari magis ubi sunt quam alibi? Item verticitas, et directio, et declinatio magnetis ad hunc motum referuntur. Etiam inveniuntur in corporibus tam naturalibus quam artificialibus, praesertim consistentibus et non fluidis, collatio quaedam et positura partium, et tanquam villi et fibrae, quae diligenter investigandae sunt; utpote sine quarum inventione corpora illa commode tractari aut regi non possunt. At circulationes illas in liquidis, per quas illa dum pressa sint, antequam se liberare possunt, se invicem relevant, ut compressionem illam ex aequo tolerent, motui libertatis verius assignamus.

15. Sit Motus Decimus Quintus, Motus Pertransitionis, sive Motus secundum Meatus; per quem virtutes corporum magis aut minus impediuntur aut provehuntur a mediis ipsorum, pro natura corporum et virtutum operantium, atque etiam medii. Aliud enim medium luci convenit, aliud sono, aliud calori et frigori, aliud virtutibus magneticis, necnon aliis nonnullis respective.

16. Sit Motus Decimus Sextus, Motus Regius (ita enim eum appellamus) sive Politicus; per quem partes in corpore aliquo praedominantes et imperantes reliquas partes fraenant, domant, subigunt, ordinant, et cogunt eas adunari, separari, consistere, moveri, collocari, non ex desideriis suis, sed prout in ordine sit et conducat ad bene esse partis illius imperantis; adeo ut sit quasi Regimen et

Politia quaedam, quam exercet pars regens in partes subditas. Eminet autem hic motus praecipue in spiritibus animalium, qui motus omnes partium reliquarum, quamdiu ipse in vigore est, contemperat. Invenitur autem in aliis corporibus in gradu quodam inferiore; quemadmodum dictum est de sanguine et urinis, quae non solvuntur donec spiritus, qui partes earum commiscebat et cohibebat, emissus fuerit aut suffocatus. Neque iste motus omnino spiritibus proprius est, licet in plerisque corporibus spiritus dominentur ob motum celerem et penetrationem. Veruntamen in corporibus magis condensatis, nec spiritu vivido et vigente (qualis inest argento vivo et vitriolo) repletis, dominantur potius partes crassiores; adeo ut nisi fraenum et jugum hoc arte aliqua excutiatur, de nova aliqua hujusmodi corporum transformatione minime sperandum sit. Neque vero quispiam nos oblitos esse existimet ejus quod nunc agitur; quia cum ista series et distributio motuum ad nil aliud spectet, quam ut illorum praedominantia per instantias luctae melius inquiratur, jam inter motus ipsos praedominantiae mentionem faciamus. Non enim in descriptione motus istius regii, de praedominantia motuum aut virtutum tractamus, sed praedominantia partium in corporibus. Haec enim ea est praedominantia, quae speciem istam motus peculiarem constituit.

17. Sit Motus Decimus Septimus, Motus Rotationis Spontaneus; per quem corpora motu gaudentia, et bene collocata, natura sua fruuntur, atque seipsa sequuntur, non aliud, et tanquam proprios petunt amplexus. Etenim videntur corpora aut movere sine termino; aut plane quiescere; aut ferri ad terminum, ubi pro natura sua aut rotent aut quiescant. Atque quae bene collocata sunt, si motu gaudeant, movent per circulum: motu scilicet aeterno et infinito. Quae bene collocata sunt, et motum exhorrent, prorsus quiescunt. Quae non bene collocata sunt, movent in linea recta (tanquam tramite brevissimo) ad consortia suorum connaturalium. Recipit autem motus iste rotationis differentias novem. Primam, centri sui, circa quod corpora movent: secundam, polorum suorum, supra quos movent: tertiam, circumferentiae sive ambitus sui, prout distant a centro: quartam, incitationis suae, prout celerius aut tardius rotant: quintam, consequutionis motus sui, veluti ab oriente in occidentem, aut ab occidente in

orientem: sextam, declinationis a circulo perfecto per spiras longius aut propius distantes a centro suo: septimam, declinationis a circulo perfecto per spiras longius aut propius distantes a polis suis: octavam, distantiae proprioris aut longioris spirarum suarum ad invicem: nonam et ultimam, variationis ipsorum polorum, si sint mobiles: quae ipsa ad rotationem non pertinet, nisi fiat circulariter. Atque iste motus communi et inveterata opinione habetur pro proprio coelestium. Attamen gravis de illo motu lis est inter nonnullos tam ex antiquis quam modernis, qui rotationem terrae attribuerunt. At multo fortasse justior movetur controversia (si modo res non sit omnino extra controversiam), an motus videlicet iste (concesso quod terra stet) coeli finibus contineatur, an potius descendat, et communicetur aeri et aquis. Motum autem rotationis in missilibus, ut in spiculis, sagittis, pilis sclopetorum, et similibus, omnino ad motum libertatis rejicimus.

18. Sit Motus Decimus Octavus, Motus Trepidationis, cui (ut ab astronomis intelligitur) non multum fidei adhibemus. Nobis autem corporum naturalium appetitus ubique serio perscrutantibus occurrit iste motus; et constitui debere videtur in speciem. Est autem hic motus veluti aeternae cujusdam captivitatis. Videlicet ubi corpora non omnino pro natura sua bene locata, et tamen non prorsus male se habentia, perpetuo trepidant, et irrequiete se agant, nec statu suo contenta, nec ulterius ausa progredi. Talis invenitur motus in corde et pulsibus animalium; et necesse est ut sit in omnibus corporibus, quae statu ancipiti ita degunt inter commoda et incommoda, ut distracta liberare se tentent, et denuo repulsam patiantur, et tamen perpetuo experiantur.

19. Sit Motus Decimus Nonus et postremus, motus ille cui vix nomen motus competit, et tamen est plane motus. Quem motum, Motum Decubitus, sive Motum Exhorrentiae Motus, vocare licet. Per hunc motum terra stat mole sua, moventibus se extremis suis in medium; non ad centrum imaginativum, sed ad unionem. Per hunc etiam appetitum omnia majorem in modum condensata motum exhorrent, atque illis pro omni appetitu est non moveri; et licet infinitis modis vellicentur et provocentur ad motum, tamen naturam suam (quoad possunt) tuentur. Quod si ad motum compellantur, tamen hoc agere semper

videntur ut quietem et statum suum recuperent, neque amplius moveant. Atque circa hoc certe se agilia praebent, et satis perniciter et rapide (ut pertaesa et impatientia omnis morae) contendunt. Hujus autem appetitus imago ex parte tantum cerni potest; quia hic apud nos, ex subactione et concoctione coelestium, omne tangibile non tantum non condensatum est ad ultimitatem, sed etiam cum spiritu nonnullo miscetur.

Proposuimus itaque jam species sive elementa simplicia motuum, appetituum, et virtutum activarum, quae sunt in natura maxime catholica. Neque parum scientiae naturalis sub illis adumbratum est. Non negamus tamen et alias species fortasse addi posse, atque istas ipsas divisiones secundum veriores rerum venas transferri, denique in minorem numerum posse redigi. Neque tamen hoc de divisionibus aliquibus abstractis intelligimus: veluti si quis dicat corpora appetere vel conservationem, vel exaltationem, vel propagationem, vel fruitionem naturae suae; aut si quis dicat motus rerum tendere ad conservationem et bonum, vel universi, ut antitypiam et nexum; vel universitatum magnarum, ut motus congregationis majoris, rotationis, et exhorrentiae motus; vel formarum specialium, ut reliquos. Licet enim haec vera sint, tamen nisi terminentur in materia et fabrica secundum veras lineas, speculativa sunt, et minus utilia. Interim sufficient et boni erunt usus ad pensitandas praedominantias virtutum et exquirendas instantias luctae; id quod nunc agitur.

Etenim ex his quos proposuimus motibus alii prorsus sunt invincibiles; alii aliis sunt fortiores, et illos ligant, fraenant, disponunt; alii aliis longius jaculantur; alii alios tempore et celeritate praevertunt; alii alios fovent, roborant, ampliant, accelerant.

Motus antitypiae omnino est adamantinus et invincibilis. Utrum vero Motus nexus sit invincibilis adhuc haeremus. Neque enim pro certo affirmaverimus utrum detur Vacuum, sive coacervatum sive permistum. At de illo nobis constat, rationem illam, propter quam introductum est Vacuum a Leucippo et Democrito (videlicet quod absque eo non possent eadem corpora complecti et implere

majora et minora spatia), talsam esse. Est enim plane plica materiae complicantis et replicantis se per spatia, inter certos fines, absque interpositione vacui; neque est in aere ex vacuo bis millies (tantum enim esse oportet) plus quam in auro. Id quod ex potentissimis corporum pneumaticorum virtutibus (quae aliter tanquam pulveris minuti natarent in vacuo), et multis aliis demonstrationibus, nobis satis liquet. Reliqui vero Motus regunt et reguntur invicem, pro rationibus vigoris, quanti, incitationis, ejaculationis, necnon tum auxiliorum tum impedimentorum quae occurrunt.

Exempli gratia: magnes armatus nonnullus detinet et suspendit ferrum, ad sexagecuplum pondus ipsius; eo usque dominatur motus congregationis minoris super motum congregationis majoris; quod si majus fuerit pondus, succumbit. Vectis tanti roboris sublevabit tantum pondus; eo usque dominatur motus libertatis super motum congregationis majoris; sin majus fuerit pondus, succumbit. Corium tensum ad tensuram talem non rumpitur; eo usque dominatur motus continuationis super motum tensurae; quod si ulterior fuerit tensura, rumpitur corium, et succumbit motus continuationis. Aqua per rimam perforationis talis effluit; eo usque dominatur motus congregationis majoris super motum continuationis; quod si minor fuerit rima, succumbit, et vincit motus continuationis. In pulvere sulphuris solius immissi in sclopetum cum pila, et admoto igne, non emittitur pila; in eo motus congregationis majoris vincit motum hyles. At in pulvere pyrio immisso vincit motus hyles in sulphure, adjutus motibus hyles et fugae in nitro. Et sic de caeteris. Etenim instantiae luctae (quae indicant praedominantiam virtutum, et secundum quas rationes et calculos praedominentur et succumbant) acri et sedula diligentia undique sunt conquirendae.

Etiam modi et rationes ipsius succumbentiae motuum diligenter sunt introspiciendae. Nempe, an omnino cessent, vel potius usque nitantur, sed ligentur. Etenim in corporibus hic apud nos, nulla vera est quies, nec in integris nec in partibus; sed tantum secundum apparentiam. Quies autem ista apparens causatur aut per aequilibrium, aut per absolutam praedominantiam motuum. Per aequilibrium, ut in bilancibus, quae stant si aequa sint pondera. Per

praedominantiam, ut in hydriis perforatis, ubi quiescit aqua et detinetur a decasu, per praedominantiam motus nexus. Notandum tamen est (ut diximus) quatenus nitantur motus illi succumbentes. Etenim si quis per luctam detineatur extensus in terra, brachiis et tibiis vinctis, aut aliter detentis; atque ille tamen totis viribus resurgere nitatur; non est minor nixus, licet non proficiat. Hujus autem rei conditio (scilicet utrum per praedominantiam motus succumbens quasi annihiletur, an potius continuetur nixus, licet non conspiciatur), quae latet in conflictibus, apparebit fortasse in concurrentiis. Exempli gratia; fiat experimentum in sclopetis, utrum sclopetus, pro tanto spatio quo emittat pilam in linea directa, sive (ut vulgo loquuntur) in puncto blanco, debiliorem edat percussionem ejaculando in supra, ubi Motus Ictus est simplex, quam desuper, ubi Motus Gravitatis concurrit cum Ictu.
Etiam canones praedominantiarum qui occurrunt colligendi sunt. Veluti, quod quo communius est bonum quod appetitur, eo motus est fortior ut motus nexus, qui respicit communionem universi, fortior est motu gravitatis, qui respicit communionem densorum. Etiam quod appetitus qui sunt boni privati, non praevalent plerunque contra appetitus boni magis publici, nisi in parvis quantis. Quae utinam obtinerent in civilibus.

XLIX.

Inter praerogativas instantiarum ponemus loco vicesimo quinto Instantias Innuentes; eas scilicet, quae commoda hominum innuunt aut designant. Etenim ipsum Posse et ipsum Scire naturam humanam amplificant, non beant. Itaque decerpenda sunt ex universitate rerum ea quae ad usus vitae maxime faciunt. Verum de iis erit magis proprius dicendi locus, cum Deductiones ad Praxim tractabimus. Quinetiam in ipso opere Interpretationis circa singula subjecta, locum semper Chartae Humanae, sive Chartae Optativae, assignamus. Etenim et quaerere et optare non inepte, pars scientiae est.

L.

Inter praerogativas instantiarum ponemus loco vicesimo sexto Instantias

inter praerogativas instantiarum ponemus loco vicesimo sexto Instantias Polychrestas. Eae sunt, quae pertinent ad varia et saepius occurrunt; ideoque operae et novis probationibus haud parum parcunt. Atque de instrumentis ipsis atque ingeniationibus proprius erit dicendi locus, cum Deductiones ad Praxim et Experimentandi Modos tractabimus. Quinetiam quae adhuc cognita sunt et in usum venerunt, in Historiis Particularibus singularum artium describentur. In praesenti autem subjungemus quaedam catholica circa ea pro exemplis tantum polychresti.

Operatur igitur homo super corpora naturalia (praeter ipsam admotionem et amotionem corporum simplicem) septem praecipue modis: nempe, vel per exclusionem eorum quae impediunt et disturbant; vel per compressiones, extensiones, agitationes, et hujusmodi; vel per calorem et frigus; vel per moram in loco convenienti; vel per fraenum et regimen motus; vel per consensus speciales; vel per alternationem tempestivam et debitam, atque seriem et successionem horum omnium; aut saltem nonnullorum ex illis.

1. Ad primum igitur quod attinet; aer communis qui undique praesto est et se ingerit, atque radii coelestium, multum turbant. Quae itaque ad illorum exclusionem faciunt, merito haberi possint pro polychrestis. Huc igitur pertinent materies et crassities vasorum, in quibus corpora ad operationem praeparata reponuntur. Similiter, modi accurati obturationis vasorum, per consolidationem et lutum sapientiae, ut loquuntur chymici. Etiam clausura per liquores in extimis, utilissima res est; ut cum infundunt oleum super vinum aut succos herbarum, quod expandendo se in summitate instar operculi, optime ea conservat illaesa ab aere. Neque pulveres res malae sunt; qui, licet contineant aerem permistum, tamen vim aeris coacervati et circumfusi arcent: ut fit in conservatione uvarum et fructuum intra arenam, et farinam. Etiam cera, mel, pix, et hujusmodi tenacia, recte obducuntur ad clausuram perfectiorem, et ad summovendum aerem et coelestia. Etiam nos experimentum quandoque fecimus, ponendo vas, necnon aliqua alia corpora, intra argentum vivum, quod omnium longe densissimum est ex iis quae circumfundi possunt. Quinetiam specus et cavernae subterraneae magni usus sunt ad prohibendum insolationem et aerem istum apertum

praedatorium; qualibus utuntur Germani Septentrionales pro granariis. Necnon repositio corporum in fundo aquarum ad hoc spectat: ut memini me quippiam audisse de utribus vini demissis in profundum puteum, ad infrigidationem scilicet, sed casu et per neglectum ac oblivionem ibidem remanentibus per multos annos, et deinde extractis; unde vinum factum est non solum non vapidum aut emortuum, sed multo magis nobile ad gustum, per commixtionem partium suarum (ut videtur) magis exquisitam. Quod si postulet res ut corpora demittantur ad fundum aquarum, veluti intra fluvios aut mare, neque tamen aquas tangant, nec in vasibus obturatis concludantur, sed aere tantum circumdentur; bonus est usus vasis illius quod adhibitum est nonnunquam ad operandum subter aquis super navigia demersa, ut urinatores diutius manere possint sub aquis, et per vices ad tempus respirare. Illud hujusmodi erat. Conficiebatur dolium ex metallo concavum, quod demittebatur aequabiliter ad superficiem aquae, atque sic deportabat totum aerem qui continebatur in dolio secum in fundum maris. Stabat autem super pedes tres (instar tripodis), qui longitudinis erant aliquanto minoris statura hominis; ita ut urinator posset cum anhelitus deficeret, immittere caput in cavum dolii, et respirare, et deinde opus continuare. Atque audivimus inventam esse jam machinam aliquam naviculae aut scaphae, quae homines subter aquis vehere possit ad spatia nonnnulla. Verum sub tali vase, quale modo diximus, corpora quaevis facile suspendi possint; cujus causa hoc experimentum adduximus.

Est et alius usus diligentis et perfectae clausurae corporum: nempe, non solum ut prohibeatur aditus aeris per exterius (de quo jam dictum est), verum etiam ut cohibeatur exitus spiritus corporis, super quod fit operatio per interius. Necesse est enim ut operanti circa corpora naturalia constet de summis suis: *viz.* quod nihil expirarit aut effluxerit. Fiunt enim profundae alterationes in corporibus, quando, natura prohibente annihilationem, ars prohibeat etiam deperditionem aut evolationem alicujus partis. Atque hac de re invaluit opinio falsa (quae si vera esset, de ista conservatione summae certae absque diminutione esset fere desperandum): *viz.* spiritus corporum, et aerem majori gradu caloris attenuatum, nullis vasorum claustris posse contineri, quin per poros vasorum subtiliores

evolent. Atque in hanc opinionem adducti sunt homines per vulgata illa experimenta, poculi inversi super aquam cum candela aut charta inflammata, ex quo fit ut aqua sursum attrahatur; atque similiter ventosarum, quae super flammam calefactae trahunt carnes. Existimant enim in utroque experimento aerem attenuatum emitti, et inde quantum ipsius minui, ideoque aquam aut carnes per nexum succedere. Quod falsissimum est. Aer enim non quanto diminuitur, sed spatio contrahitur; neque incipit motus iste successionis aquae, antequam fiat extinctio flammae aut refrigeratio aeris: adeo ut medici, quo fortius attrahant ventosae, ponant spongias frigidas aqua madefactas super ventosas. Itaque non est cur homines multum sibi metuant de facili exitu aeris aut spirituum. Licet enim verum sit etiam solidissima corpora habere suos poros, tamen aegre patitur aer aut spiritus comminutionem sui ad tantam subtilitatem; quemadmodum et aqua exire recusat per rimam minusculam.

2. De secundo vero modo ex septem praedictis illud imprimis notandum est, valere certe compressiones et hujusmodi violentias ad motum localem, atque alia id genus, potentissime; ut in machinis et missilibus: etiam ad destructionem corporis organici, atque earum virtutum quae consistunt plane in motu. Omnis enim vita, immo etiam omnis flamma et ignitio destruitur per compressiones; ut et omnis machina corrumpitur et confunditur per easdem. Etiam ad destructionem virtutum quae consistunt in posituris, et dissimilaritate partium paulo crassiore; ut in coloribus (neque enim idem color floris integri et contusi, neque succini integri et pulverizati); etiam in saporibus (neque enim idem sapor pyri immaturi, et ejusdem compressi ac subacti; nam manifesto dulcedinem majorem concipit). Verum ad transformationes et alterationes nobiliores corporum similarium non multum valent istae violentiae; quia corpora per eas non acquirunt consistentiam aliquam novam constantem et quiescentem, sed transitoriam, et nitentem semper ad restitutionem et liberationem sui. Attamen non abs re foret hujus rei facere experimenta aliqua diligentiora; ad hoc scilicet, utrum condensatio corporis bene similaris (qualia sunt aer, aqua, oleum, et hujusmodi), aut rarefactio similiter per violentiam indita, possint fieri constantes

et fixae et quasi mutatae in naturam. Id quod primo experiendum per moram simplicem; deinde per auxilia et consensus. Atque illud nobis in promptu fuisset (si modo in mentem venisset), cum aquam (de qua alibi) per malleationes et pressoria condensavimus, antequam erumperet. Debueramus enim sphaeram complanatam per aliquot dies sibi permisisse, et tum demum aquam extraxisse; ut fieret experimentum, utrum statim impletura fuisset talem dimensionem, qualem habebat ante condensationem. Quod si non fecisset aut statim, aut certe paulo post, constans videlicet facta videri potuisset ista condensatio; sin minus, apparuisset factam fuisse restitutionem, et compressionem fuisse transitoriam. Etiam simile quiddam faciendum erat circa extensionem aeris in ovis vitreis. Etenim debuerat fieri, post exuctionem fortem, subita et firma obturatio; deinde debuerant ova illa manere ita obturata per nonnullos dies; et tum demum experiendum fuisset, utrum aperto foramine attractus fuisset aer cum sibilo, aut etiam attracta fuisset tanta quantitas aquae post immersionem, quanta fuisset ab initio, si nulla adhibita fuisset mora. Probabile enim, aut saltem dignum probatione est, haec fieri potuisse et posse; propterea quod in corporibus paulo magis dissimilaribus similia efficiat mora temporis. Etenim baculum per compressionem curvatum post aliquod tempus non resilit; neque id imputandum est alicui deperditioni ex quanto ligni per moram; nam idem fiet in lamina ferri (si augeatur mora), quae non est expirabilis. Quod si non succedat experimentum per moram simplicem, tamen non deserendum est negotium, sed auxilia alia adhibenda. Non enim parum lucri fit, si per violentias indi possint corporibus naturae fixae et constantes. Hac enim ratione aer possit verti in aquam per condensationes, et complura alia id genus. Dominus enim est homo motuum violentorum, magis quam caeterorum.

3. At tertius ex septem modis refertur ad magnum illud organum, tam naturae quam artis, quoad operandum; videlicet calidum et frigidum. Atque in hac parte claudicat plane potentia humana, tanquam ex uno pede. Habemus enim calorem ignis, qui caloribus solis (prout ad nos deferuntur) et caloribus animalium quasi infinitis partibus potentior est et intensior. At deest frigus, nisi quale per

tempestates hyemales, aut per cavernas, aut per circundationes nivis et glaciei, haberi potest: quod in comparatione aequari potest cum calore fortasse solis meridiano in regione aliqua ex torridis, aucto insuper per reverberationes montium et parietum; nam hujusmodi utique tam calores quam frigora ab animalibus ad tempus exiguum tolerari possunt. Nihili autem sunt fere prae calore fornacis ardentis, aut alicujus frigoris quod huic gradui respondeat. Itaque omnia hic apud nos vergunt ad rarefactionem, et desiccationem, et consumptionem: nihil fere ad condensationem et intenerationem, nisi per misturas et modos quasi spurios. Quare Instantiae Frigoris omni diligentia sunt conquirendae: quales videntur inveniri in expositione corporum super turres quando gelat acriter; in cavernis subterraneis; circundationibus nivis et glaciei in locis profundioribus, et ad hoc excavatis; demissione corporum in puteos; sepulturis corporum in argento vivo et metallis; immersione corporum in aquis, quae vertunt ligna in lapides; defossione corporum in terra (qualis fertur apud Chinenses esse confectio porcellanae, ubi massae ad hoc factae dicuntur manere intra terram per quadraginta aut quinquaginta annos, et transmitti ad haeredes, tanquam minerae quaedam artificiales); et hujusmodi. Quinetiam quae interveniunt in natura condensationes, factae per frigora, similiter sunt investigandae; ut, causis eorum cognitis, transferri possint in artes. Quales cernuntur in exudatione marmoris et lapidum; in rorationibus super vitra per interius fenestrarum, sub auroram, post gelu noctis; in originibus et collectionibus vaporum in aquas sub terra, unde saepe scaturiunt fontes; et quaecunque sunt hujus generis.

Inveniuntur autem, praeter illa quae sunt frigida ad tactum, quaedam alia potestate frigida, quae etiam condensant; veruntamen operari videntur super corpora animalium tantum, et vix ultra. Hujus generis se ostendunt multa in medicinis et emplastris. Alia autem condensant carnes et partes tangibiles; qualia sunt medicamenta astringentia, atque etiam inspissantiae: alia condensant spiritus; id quod maxime cernitur in soporiferis. Duplex autem est modus condensationis spirituum, per medicamenta soporifera, sive provocantia somnum: alter per sedationem motus; alter per fugam spirituum. Etenim viola,

rosa sicca, lactuca, et hujusmodi benedicta sive benigna, per vapores suos amicos et moderate refrigerantes, invitant spiritus ut se uniant, et ipsorum acrem et inquietum motum compescunt. Etiam aqua rosacea, apposita ad nares in deliquiis animae, spiritus resolutos et nimium relaxatos se recipere facit, et tanquam alit. At opiata et eorum affinia spiritus plane fugant, ex qualitate sua maligna et inimica. Itaque si applicentur parti exteriori, statim aufugiunt spiritus ab illa parte, nec amplius libenter influunt: sin sumantur interius, vapores eorum, ascendentes ad caput, spiritus in ventriculis cerebri contentos undequaque fugant; cumque se retrahant spiritus neque in aliam partem effugere possint, per consequens coeunt et condensantur; et quandoque plane extinguuntur et suffocantur; licet rursus eadem opiata moderate sumpta, per accidens secundarium (videlicet condensationem illam quae a coitione succedit), confortent spiritus, eosque reddant magis robustos, et retundant eorum inutiles et incensivos motus, ex quo ad curas morborum, et vitae prolongationem haud parum conferant.

Etiam praeparationes corporum ad excipiendum frigus non sunt omittendae; veluti quod aqua parum tepida facilius conglacietur quam omnino frigida, et hujusmodi.

Praeterea, quia natura frigus tam parce suppeditat, faciendum est quemadmodum pharmacopolae solent; qui, quando simplex aliquod haberi non possit, capiunt succedaneum ejus, et quid pro quo, ut vocant: veluti lignum aloes pro xylobalsamo, cassiam pro cinamomo. Simili modo diligenter circumspiciendum est, si quae sint succedanea frigoris; videlicet quibus modis fieri possint condensationes in corporibus, aliter quam per frigus, quod illas efficit ut opus suum proprium. Illae autem condensationes videntur intra quaternum numerum (quantum adhuc liquet) contineri. Quarum prima videtur fieri per contrusionem simplicem; quae parum potest ad densitatem constantem (resiliunt enim corpora) sed nihilominus forte res auxiliaris esse queat. Secunda fit per contractionem partium crassiorum in corpore aliquo, post evolationem aut exitum partium tenuiorum, ut fit in indurationibus per ignem, et repetitis extinctionibus metallorum, et similibus. Tertia fit per coitionem partium homogenearum, quae

sunt maxime solidae in corpore aliquo, atque antea fuerant distractae, et cum minus solidis commistae: veluti in restitutione mercurii sublimati, qui in pulvere longe majus occupat spatium quam mercurius simplex, et similiter in omni repurgatione metallorum a scoriis suis. Quarta fit per consensus, admovendo quae ex vi corporum occulta condensant; qui consensus adhuc raro se ostendunt; quod mirum minime est, quoniam antequam inventio succedat formarum et schematismorum, de inquisitione consensuum non multum sperandum est. Certe quoad corpora animalium, dubium non est quin sint complures medicinae, tam interius quam exterius sumptae, quae condensant tanquam per consensum, ut paulo ante diximus. Sed inanimatis rara est hujusmodi operatio. Percrebuit sane, tam scriptis quam fama, narratio de arbore in una ex insulis sive Terceris sive Canariis (neque enim bene memini), quae perpetuo stillat; adeo ut inhabitantibus nonnullam commoditatem aquae praebeat. Paracelsus autem ait, herbam vocatam Rorem Solis meridie et fervente sole rore impleri, cum aliae herbae undique sint siccae. At nos utramque narrationem fabulosam esse existimamus. Omnino autem illae instantiae nobilissimi forent usus, et introspectione dignissimae, si essent verae. Etiam rores illos mellitos, et instar mannae, qui super foliis quercus inveniuntur mense Maio, non existimamus fieri et densari a consensu aliquo, sive a proprietate folii quercus; sed cum super aliis foliis pariter cadant, contineri scilicet et durare in foliis quercus, quia sunt bene unita, nec spongiosa, ut plurima ex aliis.

Calorem vero quod attinet, copia et potestas nimirum homini abunde adest; observatio autem et inquisitio deficit in nonnullis, iisque maxime necessariis, utcunque spagyrici se venditent. Etenim caloris intensioris opificia exquiruntur et conspiciuntur; remissioris vero, quae maxime in vias naturae incidunt, non tentantur, ideoque latent. Itaque videmus per vulcanos istos qui in pretio sunt, spiritus corporum magnopere exaltari, ut in aquis fortibus, et nonnullis aliis oleis chymicis; partes tangibiles indurari, et, emisso volatili, aliquando figi; partes homogeneas separari; etiam corpora heterogenea grosso modo incorporari et commisceri; maxime autem compages corporum compositorum et subtiliores schematismos destrui et confundi. Debuerant autem opificia caloris lenioris

tentari et exquiri; unde subtiliores misturae et schematismi ordinati gigni possint et educi, ad exemplum naturae et imitationem operum solis; quemadmodum in aphorismo de instantiis foederis quaedam adumbravimus. Opificia enim naturae transiguntur per longe minores portiones, et posituras magis exquisitas et varias, quam opificia ignis, prout nunc adhibetur. Tum vero videatur homo revera auctus potestate, si per calores et potentias artificiales opera naturae possint specie repraesentari, virtute perfici, copia variari; quibus addere oportet accelerationem temporis. Nam rubigo ferri longo tempore procedit, at versio in crocum Martis subito; et similiter de aerugine et cerussa. Christallum longo tempore conficitur, vitrum subito conflatur. Lapides longo tempore concrescunt, lateres subito coquuntur, *etc.* Interim (quod nunc agitur) omnes diversitates caloris cum effectibus suis respective diligenter et industrie undique sunt colligendae et exquirendae: coelestium, per radios suos directos, reflexos, refractos, et unitos in speculis comburentibus; fulguris, flammae, ignis carbonum; ignis ex diversis materiis; ignis aperti, conclusi, angustiati, et inundantis, denique per diversas fabricas fornacium qualificati; ignis flatu exciti, quieti et non exciti; ignis ad majorem aut minorem distantiam remoti; ignis per varia media permeantis; calorum humidorum, ut balnei Mariae, fimi, caloris animalium per exterius, caloris animalium per interius, foeni conclusi; calorum aridorum, cineris, calcis, arenae tepidae; denique calorum cujusvis generis cum gradibus eorum.

Praecipue vero tentanda est inquisitio et inventio effectuum et opificiorum caloris accedentis et recedentis graduatim, et ordinatim, et periodice, et per debita spatia et moras. Ista enim inaequalitas ordinata revera filia coeli est, et generationis mater; neque a calore aut vehementi, aut praecipiti, aut subsultorio, aliquid magni expectandum est. Etenim et in vegetabilibus hoc manifestissimum est; atque etiam in uteris animalium magna est caloris inaequalitas, ex motu, somno, alimentationibus et passionibus foemellarum quae uterum gestant; denique in ipsis matricibus terrae, iis nimirum in quibus metalla et fossilia efformantur, locum habet et viget ista inaequalitas. Quo magis notanda est inscitia aliquorum alchymistarum ex reformatis, qui per calores aequabiles

lampadum et hujusmodi, perpetuo uno tenore ardentium, se voti compotes fore existimarunt. Atque de opificiis et effectibus caloris haec dicta sint. Neque vero tempestivum est illa penitus scrutari, antequam rerum formae et corporum schematismi ulterius investigati fuerint, et in lucem prodierint. Tum enim quaerenda et adoperanda et aptanda sunt instrumenta, quando de exemplaribus constiterit.

4. Quartus modus operandi est per moram, quae certe et promus et condus naturae est, et quaedam dispensatrix. Moram appellamus, cum corpus aliquod sibi permittitur ad tempus notabile, munitum interim et defensum ab aliqua vi externa. Tum enim motus intestini se produnt et perficiunt, cum motus extranei et adventitii cessant. Opera autem aetatis sunt longe subtiliora quam ignis. Neque enim possit fieri talis clarificatio vini per ignem, qualis fit per moram; neque etiam incinerationes per ignem tam sunt exquisitae, quam resolutiones et consumptiones per saecula. Incorporationes etiam, et mistiones subitae et praecipitatae per ignem, longe inferiores sunt illis, quae fiunt per moram. At dissimilares et varii schematismi, quos corpora per moras tentant (quales sunt putredines), per ignem aut calorem vehementiorem destruuntur. Illud interim non abs re fuerit notare; motus corporum penitus conclusorum habere nonnihil ex violento. Incarceratio enim illa impedit motus spontaneos corporis. Itaque mora in vase aperto plus facit ad separationes; in vase penitus clauso ad commistiones; in vase nonnihil clauso, sed subintrante aere, ad putrefactiones. Utcunque de opificiis et effectibus morae undique sunt diligenter conquirendae instantiae.

5. At regimen motus (quod est quintus ex modis operandi) non parum valet. Regimen autem motus vocamus, cum corpus aliud occurrens corporis alterius motum spontaneum impedit, repellit, admittit, dirigit. Hoc vero plerunque in figuris et situ vasorum consistit. Etenim conus erectus juvat ad condensationem vaporum in alembicis; at conus inversus juvat defaecationem sacchari in vasis resupinatis. Aliquando autem sinuatio requiritur, et angustiatio, et dilatatio per vices, et hujusmodi. Etiam omnis percolatio huc spectat; scilicet cum corpus

occurrens uni parti corporis alterius viam aperit, alteri obstruit. Neque semper percolatio aut aliud regimen motus fit per extra; sed etiam per corpus in corpore: ut cum lapilli immittuntur in aquas ad colligendam limositatem ipsarum; syrupi clarificantur cum albuminibus ovorum, ut crassiores partes adhaerescant, et postea separari possint. Etiam huic regimini motus satis leviter et inscite attribuit Telesius figuras animalium, ob rivulos scilicet et loculos matricis. Debuerat autem notare similem efformationem in testis ovorum, ubi non sunt rugae aut inaequalitas. At verum est regimen motus efformationes perficere in modulis et proplasticis.

6. Operationes vero per consensus aut fugas (qui sextus modus est) latent saepenumero in profundo. Istae enim (quas vocant) proprietates occultae, et specificae, et sympathiae, et antipathiae, sunt magna ex parte corruptelae philosophiae. Neque de consensibus rerum inveniendis multum sperandum est, ante inventionem formarum et schematismorum simplicium. Consensus enim nil aliud est quam symmetria formarum et schematismorum ad invicem.
Atqui majores et magis catholici rerum consensus non prorsus obscuri sunt. Itaque ab iis ordiendum. Eorum prima et summa diversitas ea est; ut quaedam corpora copia et raritate materiae admodum discrepent, schematismis consentiant: alia contra copia et raritate materiae consentiant, schematismis discrepent. Nam non male notatum est a chymicis, in principiorum suorum triade, sulphur et mercurium quasi per universitatem rerum permeare. (Nam de sale inepta ratio est, sed introducta ut possit comprehendere corpora terrea, sicca, et fixa.) At certe in illis duobus videtur consensus quidam naturae ex maxime catholicis conspici. Etenim consentiunt sulphur; oleum, et exhalatio pinguis; flamma; et fortasse corpus stellae. Ex altera parte consentiunt mercurius; aqua et vapores aquei; aer; et fortasse aether purus et interstellaris. Attamen istae quaterniones geminae, sive magnae rerum tribus (utraque intra ordines suos), copia materiae atque densitate immensum differunt, sed schematismo valde conveniunt; ut in plurimis se produnt. At contra metalla diversa copia et densitate multum conveniunt (praesertim respectu vegetabilium, etc.), sed

schematismo multifariam differunt; et similiter vegetabilia et animalia diversa schematismis quasi infinitis variantur, sed intra copiam materiae sive densitatem paucorum graduum continentur.

Sequitur consensus maxime post priorem catholicus, videlicet corporum principalium et fomitum suorum; videlicet menstruorum, et alimentorum. Itaque exquirendum, sub quibus climatibus, et in qua tellure, et ad quam profunditatem metalla singula generentur; et similiter de gemmis, sive ex rupibus, sive inter mineras natis; in qua gleba terrae, arbores singulae, et frutices, et herbae potissimum proveniant, et tanquam gaudeant; et insimul quae impinguationes, sive per stercorationes cujuscunque generis, sive per cretam, arenam maris, cineres, etc., maxime juvent; et quae sint ex his pro varietate glebarum magis aptae et auxiliares. Etiam insitio et inoculatio arborum et plantarum, earumque ratio, quae scilicet plantae super quas foelicius inserantur, etc., multum pendet de consensu. In qua parte non injucundum foret experimentum, quod noviter audivimus esse tentatum, de insitione arborum sylvestrium (quae hucusque in arboribus hortensibus fieri consuevit), unde folia et glandes majorem in modum amplificantur, et arbores fiunt magis umbrosae. Similiter, alimenta animalium respective notanda sunt in genere, et cum negativis. Neque enim carnivora sustinent herbis nutriri; unde etiam Ordo Folitanorum (licet voluntas humana plus possit quam animantium caeterorum super corpus suum), post experientiam factam (ut aiunt), tanquam ab humana natura non tolerabilis, fere evanuit. Etiam materiae diversae putrefactionum, unde animalcula generantur, notandae sunt. Atque consensus corporum principalium erga subordinata sua (tales enim ii possint censeri quos notavimus) satis in aperto sunt. Quibus addi possunt sensuum consensus erga objecta sua. Qui consensus, cum manifestissimi sint, bene notati, et acriter excussi, etiam aliis consensibus qui latent magnam praebere possint lucem.

At interiores corporum consensus et fugae, sive amicitiae et lites (taedet enim nos fere vocabulorum sympathiae et antipathiae, propter superstitiones et inania), aut falso ascriptae, aut fabulis conspersae, aut per neglectum rarae admodum sunt. Etenim si quis asserat inter vineam et brassicam esse dissidium,

quia juxta sata minus laete proveniunt, praesto ratio est: quod utraque planta succulenta sit et depraedatrix, unde altera alteram defraudat. Si quis asserat esse consensum et amicitiam inter segetes et cyaneum, aut papaver sylvestre, quia herbae illae fere non proveniunt nisi in arvis cultis: debuit is potius asserere dissidium esse inter ea, quia papaver et cyaneus emittuntur et creantur ex tali succo terrae qualem segetes reliquerint et repudiaverint; adeo ut satio segetum terram praeparet ad eorum proventum. Atque hujusmodi falsarum ascriptionum magnus est numerus. Quoad fabulas vero, illae omnino sunt exterminandae. Restat tenuis certe copia eorum consensuum, qui certo probati sunt experimento; quales sunt magnetis et ferri, atque auri et argenti vivi, et similium. At in experimentis chymicis circa metalla inveniuntur et alii nonnulli observatione digni. Maxima vero frequentia eorum (ut in tanta paucitate) invenitur in medicinis nonnullis, quae, ex proprietatibus suis occultis (quas vocant) et specificis, respiciunt aut membra, aut humores, aut morbos, aut quandoque naturas individuas. Neque omittendi sunt consensus inter motus et affectus lunae et passiones corporum inferiorum, prout ex experimentis agriculturae, nauticae, et medicinae, aut alias cum delectu severo et sincero colligi et recipi possint. Verum instantiae universae consensuum secretiorum, quo magis sunt infrequentes, eo majori cum diligentia sunt inquirendae, per traditiones, et narrationes fidas et probas; modo hoc fiat absque ulla levitate, aut credulitate, sed fide anxia et quasi dubitabunda. Restat consensus corporum modo operandi tanquam inartificialis, sed usu polychrestus, qui nullo modo omittendus est, sed sedula observatione investigandus. Is est coitio sive unio corporum, proclivis aut difficilis, per compositionem, sive appositionem simplicem. Etenim corpora nonnulla facile et libenter commiscentur et incorporantur, alia autem aegre et perverse: veluti pulveres melius incorporantur cum aquis; calces et cineres, cum oleis; et sic de similibus. Neque tantum sunt colligendae instantiae propensionis aut aversionis corporum erga misturam, sed etiam collocationis partium, et distributionis, et digestionis, postquam commista sint; denique et praedominantiae post misturam transactam.

7. Superest ultimo loco ex modis septem operandi septimus et postremus: operatio scilicet per alternationem et vicissitudines priorum sex; de quo antequam in singulos illos paulo altius fuerit inquisitum, tempestivum non foret exempla proponere. Series autem sive catena hujusmodi alternationis, prout ad singula effecta accommodari possit, res est et cognitu maxime difficilis, et ad opera maxime valida. Summa autem detinet et occupat homines impatientia hujusmodi tam inquisitionis, quam praxeos; cum tamen sit instar fili labyrinthi, quoad opera majora. Atque haec sufficiant ad exemplum Polychresti.

LI.

Inter praerogativas instantiarum, ponemus loco vicesimo septimo atque ultimo Instantias Magicas. Hoc nomine illas appellamus, in quibus materia aut efficiens tenuis aut parva est, pro magnitudine operis et effectus qui sequitur; adeo ut etiamsi fuerint vulgares, tamen sint instar miraculi; aliae primo intuitu, aliae etiam attentius contemplanti. Has vero natura ex sese subministrat parce; quid vero factura sit sinu excusso, et post inventionem formarum, et processuum, et schematismorum, futuris temporibus apparebit. At ista effecta magica (quantum adhuc conjicimus) fiunt tribus modis: aut per multiplicationem sui, ut in igne, et venenis, quae vocant specifica; necnon in motibus, qui transeunt et fortificantur de rota in rotam: aut per excitationem sive invitationem in altero, ut in magnete, qui excit acus innumeras, virtute nullatenus deperdita aut diminuta; aut in fermento, et hujusmodi: aut per anteversionem motus, ut dictum est de pulvere pyrio, et bombardis, et cuniculis: quorum priores duo modi indagationem consensuum requirunt; tertius, mensurae motuum. Utrum vero sit aliquis modus mutandi corpora per minima (ut vocant), et transponendi subtiliores materiae schematismos (id quod ad omnimodas corporum transformationes pertinet, ut ars brevi tempore illud facere possit, quod natura per multas ambages molitur), de eo nulla hactenus nobis constant indicia. Quemadmodum autem in solidis et veris aspiramus ad ultima et summa; ita vana et tumida perpetuo odimus, et quantum in nobis est profligamus.

LII.

Atque de Dignitatibus sive Praerogativis Instantiarum haec dicta sint. Illud vero monendum, nos in hoc nostro Organo tractare logicam, non philosophiam. Sed cum logica nostra doceat intellectum et erudiat ad hoc, ut non tenuibus mentis quasi claviculis rerum abstracta captet et prenset (ut logica vulgaris), sed naturam revera persecet, et corporum virtutes et actus eorumque leges in materia determinatas inveniat; ita ut non solum ex natura mentis, sed ex natura rerum quoque haec scientia emanet: mirum non est, si ubique naturalibus contemplationibus et experimentis, ad exempla artis nostrae, conspersa fuerit et illustrata. Sunt autem (ut ex iis quae dicta sunt patet) Praerogativae Instantiarum numero 27; nominibus: Instantiae Solitariae: Instantiae Migrantes: Instantiae Ostensivae: Instantiae Clandestinae: Instantiae Constitutivae: Instantiae Conformes: Instantiae Monodicae: Instantiae Deviantes: Instantiae Limitaneae: Instantiae Potestatis: Instantiae Comitatus et Hostiles: Instantiae Subjunctivae: Instantiae Foederis: Instantiae Crucis: Instantiae Divortii: Instantiae Januae: Instantiae Citantes: Instantiae Viae: Instantiae Supplementi: Instantiae Persecantes: Instantiae Virgae: Instantiae Curriculi: Doses Naturae: Instantiae Luctae: Instantiae Innuentes: Instantiae Polychrestae: Instantiae Magicae. Usus autem harum instantiarum, in quo instantias vulgares excellunt, versatur in genere aut circa partem informativam; aut circa operativam; aut circa utramque. Atque quoad informativam, juvant illae aut sensum, aut intellectum. Sensum, ut quinque Instantiae Lampadis: intellectum, aut accelerando exclusivam formae, ut Solitariae; aut angustiando et propius indicando affirmativam formae, ut Migrantes, Ostensivae, Comitatus, cum Subjunctivis; aut erigendo intellectum, et ducendo ad genera et naturas communes; idque aut immediate, ut Clandestinae, Monodicae, Foederis; aut gradu proximo, ut Constitutivae; aut gradu infimo, ut Conformes; aut rectificando intellectum a consuetis, ut Deviantes; aut ducendo ad Formam Magnam, sive Fabricam Universi, ut Limitaneae; aut cavendo de formis et causis falsis, ut Crucis et Divortii. Quod vero ad Operativam attinet; illae practicam aut designant, aut mensurant, aut sublevant. Designant aut

ostendendo a quibus incipiendum, ne actum agamus, ut Instantiae Potestatis; aut ad quid aspirandum, si detur facultas, ut Innuentes: mensurant quatuor illae Mathematicae: sublevant Polychrestae et Magicae.
Rursus ex istis instantiis 27, nonnullarum (ut superius diximus de aliquibus) facienda est collectio jam ab initio, nec expectanda particularis inquisitio naturarum. Cujus generis sunt instantiae conformes, monodicae, deviantes, limitaneae, potestatis, januae, innuentes, polychrestae, magicae. Hae enim aut auxiliantur et medentur intellectui et sensui, aut instruunt praxin in genere. Reliquae tum demum conquirendae sunt, cum conficiemus tabulas comparentiae ad opus interpretis circa aliquam naturam particularem. Sunt enim instantiae praerogativis istis insignitae et donatae animae instar, inter vulgares instantias comparentiae; et ut ab initio diximus, paucae illarum sunt vice multarum; quocirca cum tabulas conficimus, illae omni studio sunt investigandae, et in tabulas referendae. Erit etiam earum mentio necessaria in iis quae sequuntur. Praeponendus itaque erat earum tractatus. Nunc vero ad adminicula et rectificationes Inductionis, et deinceps ad concreta, et latentes processus, et latentes schematismos, et reliqua quae Aphorismo 21. ordine proposuimus, pergendum; ut tandem (tanquam curatores probi et fideles) tradamus hominibus fortunas suas, emancipato intellectu, et facto tanquam majore: unde necesse est sequi emendationem status hominis, et ampliationem potestatis ejus super naturam. Homo enim per lapsum et de statu innocentiae decidit, et de regno in creaturas. Utraque autem res etiam in hac vita nonnulla ex parte reparari potest; prior per religionem et fidem, posterior per artes et scientias. Neque enim per maledictionem facta est creatura prorsus et ad extremum rebellis. Sed in virtute illius diplomatis, In sudore vultus comedes panem tuum, per labores varios (non per disputationes certe, aut per otiosas ceremonias magicas), tandem et aliqua ex parte ad panem homini praebendum, id est, ad usus vitae humanae subigitur.

Finis Libri Secundi Novi Organi.

History of the Reign of King Henry VII

AFTER that Richard the Third of that Name, King in Fact only, but Tyrant both in Title and Regiment, and so commonly termed and reputed in all times since, was by the Divine Revenge, favouring the Design of an Exil'd man, overthrown and slain at Bosworth-field: There succeeded in the Kingdom the Earl of Richmond, thence-forth stiled Henry the Seventh. The King immediately after the Victory, as one that had been bred under a devout Mother, and was in his nature, a great observer of Religious Forms, caused Te Deum Laudamus to be solemnly sung in the presence of the whole Army upon the place, and was himself with general Applause, and great Cries of Joy, in a kind of Militar Election, or Recognition, saluted King. Meanwhile the Body of Richard, after many Indignities and Reproaches (the Dirigies and Obsequies of the common People towards Tyrants) was obscurely Buried. For though the King of his Nobleness gave charge unto the Fryers of Leicester to see an Honourable Interrment to be given to it, yet the Religious people themselves (being not free from the Humours of the Vulgar) neglected it; wherein nevertheless they did not then incurr any mans blame or Censure. No man thinking any Ignominy or Contumely unworthy of him, that had been the Executioner of King Henry the Sixth (that innocent Prince) with his own hands; the Contriver of the death of the Duke of Clarence, his Brother; the Murderer of his two Nephews (one of them his Lawfull King in the Present, and the other in the Future failing of him) and vehemently suspected to have been the Impoisoner of his Wife, thereby to make vacant his Bed, for a Marriage within the Degrees forbidden. And although he were a Prince in Militar Virtue approved, jealous of the Honour of the English Nation, and likewise a good Law-maker, for the ease and solace of the common People: yet his Cruelties and Parricides, in the Opinion of all men, weighed down his Virtues and Merits; and in the opinion of Wise men, even those Virtues themselves were conceived to be rather feigned, and affected things to serve his

Ambition, than Qualities ingenrate in his Judgement or Nature. And therefore it was noted by men of great Understanding, (who seeing his after Acts, looked back upon his former Proceedings) that even in the time of King Edward his Brother, he was not without secret Trains and Mines to turn Envy and Hatred upon his Brother's Government; as having an Expectation and a kind of Divination, that the King, by reason of his many Disorders, could not be of long Life, but was like to leave his Sonnes of tender years; and then he knew well, how easie a step it was, from the place of a Protector, and first Prince of the Blood, to the Crown. And that out of this deep root of Ambition it sprang, that as well at the Treaty of Peace that passed between Edward the Fourth, and Lewis the Eleventh of France, concluded by Enterview of both Kings at Piqueny, as upon all other Occasions, Richard then Duke of Glocester, stood ever upon the side of Honour, raising his own Reputation to the disadvantage of the King his Brother, and drawing the eyes of all (specially of the Nobles and Soldiers) upon himself; as if the King by his voluptuous Life and mean Marriage, were become Effeminate, and less sensible of Honour, and Reason of State, than was fit for a King. And as for the Politique and wholesom Laws which were Enacted in his Time, they were interpreted to be but the Brocage of an Usurper, thereby to wooe, and winne the Hearts of the People; as being conscious to himself that the true Obligations of Soveraignty in him failed, and were wanting. But King Henry in the very entrance of his Reign, and the instant of time, when the Kingdom was cast into his Arms, met with a Point of great difficulty, and knotty to solve, able to trouble and confound the Wisest King in the newness of his Estate; and so much the more, because it could not endure a Deliberation, but must be at once deliberated and determined. There were fallen to his Lot, and concurrent to his Person, three several Titles to the Imperial Crown: The first, the Title of the Lady Elizabeth, with whom, by precedent Pact with the Party that brought him in, he was to Marry. The second, the Antient and long disputed Title (both by Plea and Arms) of the House of Lancaster, to which he was Inheritour in his own Person. The third, the Title of the Sword or Conquest, for that he came in by Victory of Battel, and that the King in possession was slain in

the field. The first of these was fairest, and most like to give contentment to the People, who by Two and twenty Years Reign of King Edward the Fourth, had been fully made capable of the clearness of the Title of the White-Rose or House of York; and by the milde and plausible Reign of the same King toward his latter time, were become affectionate to that Line. But then it lay plain before his Eyes, that if he relyed upon that Title, he could be but a King at Curtesie, and have rather a Matrimonial than a Regal Power: the Right remaining in his Queen, upon whose decease, either with Issue, or without Issue, he was to give place, and be removed. And though he should obtain by Parliament to be continued, yet he knew there was a very great difference between a King that holdeth his Crown by a civil Act of Estates, and one that holdeth it Originally by the Law of Nature, and Descent of Blood. Neither wanted there even at that time secret Rumors and whisperings (which afterwards gathered strength, and turned to great Troubles) that the two young Sons of King Edward the Fourth, or one of them (which were said to be destroyed in the Tower) were not indeed Murthered, but conveyed secretly away, and were yet living: which if it had been true, had prevented the Title of the Lady Elizabeth. On the other side, if he stood upon his own Title of the House of Lancaster, inherent in his Person; he knew it was a Title condemned by Parliament, and generally prejudged in the common Opinion of the Realm, and that it tended directly to the Dis-inherison of the Line of York, held then the indubiate Heirs of the Crown. So that if he should have no Issue by the Lady Elibabeth, which should be Descendents of the Double-Line, then the Ancient flames of Discord and Intestine Wars, upon the Competition of both Houses, would again return and revive.

As for Conquest notwithstanding, Sir William Stanly, after some Acclamations of the Soldiers in the Field, had put a Crown of Ornament (which Richard wore in the Battel, and was found amongst the Spoils) upon King Henry's Head, as if there were his chief Title; yet he remembred well upon what Conditions and Agreements he was brought in, and that to claim as Conqueror, was to put as well his own Party, as the rest, into Terrour and Fear; as that which gave him Power of Disannulling of Laws, and disposing of Mens Fortunes and

Estates, and the like points of Absolute Power, being in themselves so harsh and odious, as that William himself, commonly called the Conqueror, however he used and exercised the Power of a Conqueror, to reward his Normans, yet he forbare to use that Claim in the beginning, but mixed it with a Titulary pretence grounded upon the Will and Designation of Edward the Confessor. But the King out of the greatness of his own mind, presently cast the Die, and the Inconveniences appearing unto him on all parts; and knowing there could not be any Interreign or suspension of Title; and preferring his Affection to his own Line and Blood, and liking that Title best which made him independent; and being in his Nature and constitution of Mind not very apprehensive or forecasting of future Events a-far off, but an Entertainer of Fortune by the Day; resolved to rest upon the Title of Lancaster as the Main, and to use the other two, that of Marriage, and that of Battel, but as Supporters, the one to appease secret Discontents, and the other to beat down open murmur and dispute: Not forgetting that the same Title of Lancaster had formerly maintained a possession of three Descents in the Crown, and might have proved a Perpetuity, had it not ended in the weakness and inability of the last Prince. Whereupon the King presently that very day, being the Two and Twentieth of August, assumed the Stile of King in his own name, without mentioning of the Lady Elizabeth at all, or any relation thereunto. In which course he ever after persisted, which did spin him a Thread of many Seditions and Troubles. The King full of these thoughts, before his departure from Leicester, dispatched Sir Robert Willoughby to the Castle of Sheriff-Hutton in Torkshire, where were kept in safe Custody by King Richard's commandment, both the Lady Elizabeth Daughter of King Edward, and Edward Plantagenet, Son and Heir to George Duke of Clarence. This Edward was by the King's Warrant delivered from the Constable of the Castle to the hand of Sir Robert Willoughby; and by him with all safety and diligence conveyed to the Tower of London, where he was shut up Closeprisoner. Which Act of the King's (being an Act meerly of Policy and Power) proceeded not so much from any apprehension he had of Doctor Shaw's Tale at Paul's Cross, for the Bastarding of Edward the Fourth's Issues, in which case this young

Gentleman was to succeed, (for that Fable was ever exploded) but upon a setled disposition to depress all Eminent Persons of the Line of Tork. Wherein still the King out of strength of Will, or weakness of Judgement, did use to shew a little more of the Party, than of the King.

For the Lady Elizabeth she received also a direction to repait with all convenient speed to London, and there to remain with the Queen Dowager her Mother; which accordingly she soon after did, accompanied with many. Noblemen and Ladies of Honour. In the mean season the King set forwards by easie Journeys to the City of London, receiving the Acclamations and Applauses of the People as he went, which indeed were true and unfeigned, as might well appear in the very Demonstrations and fulness of the Cry. For they thought generally that he was a Prince as ordained and sent down from Heaven, to unite and put to an end to the long Dissentions of the two Houses, which although they had had in the times of Henry the Fourth, Henry the Fifth, and a part of Henry the Sixth on the one side, and the times of Edward the Fourth on the other, Lucid-Intervalls and happy Pauses; yet they did ever hang over the Kingdom, ready to break forth into new Perturbations and Calamities. And as his Victory gave him the Knee, so his purpose of Marriage with the Lady Elizabeth gave him the Heart; so that both Knee and Heart did truly bow before him.

He on the other side, with great Wisdom, (not ignorant of the Affections and Fears of the People) to disperse the conceit and terrour of a Conquest, had given Order that there should be nothing in his Journey like unto a Warlike March, or manner: but rather like unto the Progress of a King in full Peace and Assurance.

He entred the City upon a Saturday, as he had also obtained the Victory upon a Saturday, which Day of the Week first upon an Observation, and after upon Memory and Fancy, he accounted and chose as a Day prosperous unto him.

The Mayor and Companies of the City received him at Shoreditch: whence, with great and Honorable attendance and troops of Noblemen, and Persons of Quality he entred the City; himself not being on Horseback, or in any open Chair, or Throne, but in a close Chariot, as one that having been sometimes an

Enemy to the whole State, and a Proscribed person, chose rather to keep State, and strike a Reverence into the People, than to fawn upon them.

He went first into Saint Paul's Church, where not meaning that the People should forget too soon that he came in by Battel, he made an Offertory of his Standards, and had Orizon and Te Deum again sung, and went to his Lodging prepared in the Bishop of London's Palace, where he stayed for a time.

During his abode there, he Assembled his Council, and other principal Persons, in presence of whom, he did renew again his promise to marry with the Lady Elizabeth. This he did the rather, because having at his coming out of Britain given artificially, for serving of his own turn, some hopes, in case he obtained the Kingdome, to Marry Anne Inheritress to the Dutchy of Britain, whom Charles the Eighth of France soon after Married. It bred some doubt and suspition amongst divers, that he was not sincere, or at least not fixed in going on with the Match of England so much desired: which Conceit also, though it were but Talk and Discourse, did much afflict the poor Lady Elizabeth her self. But howsoever he both truly intended it, and desired also it should be so believed, (the better to extinguish Envy and Contradiction to his other purposes) yet was he resolved in himself not to proceed to the Consummation thereof, till his Coronation and a Parliament were past. The one, lest a joynt-Coronation of himself and his Queen might give any countenance of Participation of Title: The other, lest in the Intayling of the Crown to himself, which he hoped to obtain by Parliament, the Votes of the Parliament might any ways reflect upon her.

About this time in Autumn, towards the end of September, there began and reigned in the City and other parts of the Kingdom a Disease then new; which of the Accidents, and manner thereof, they called the Sweating-Sickness. This Disease had a swift course both in the Sick-Body and in the Time and Period of the lasting thereof: for they that were taken with it, upon Four and twenty Hours escaping were thought almost assured. And as to the Time of the malice and reign of the Disease e're it ceased; It began about the One and twentieth of September, and cleared up before the end of October, insomuch that it was no hinderance to the King's Coronation, which was the last of October: nor (which

was more) to the holding of the Parliament, which began but seven days after. It was a Pestilent-Feaver, but, as it seemeth, not seated in the Veins or Humors, for that there followed no Carbuncle, no purple or livid Spots, or the like, the Mass of the Body being not tainted: only a malign Vapour flew to the Heart, and seised the Vital Spirits; which stirred Nature to strive to send it forth by an extreme Sweat. And it appeared by Experience that this Disease was rather a Surprize of Nature, than obstinate to Remedies, if it were in time looked unto. For if the Patient were kept in an equal temper, both for Clothes, Fire, and Drink, moderately warm, with temperate Cordials, whereby Natures work were neither irritated by Heat, nor turned back by Cold, he commonly Recovered. But infinite Persons dyed suddenly of it, before the manner of the Cure and attendance was known. It was conceived not to be an Epidemick Disease, but to proceed from a Malignity in the Constitution of the Air, gathered by the predispositions of Seasons: and the speedy Cessation declared as much.

On Simon and Jude's Even the King dined with Thomas Bourcchier, Arch-Bishop of Canterbury and Cardinal: and from Lambeth went by Land over the Bridge to the Tower, where the morrow after he made Twelve Knights-Bannerets. But for Creations he dispensed them with a sparing Hand. For notwithstanding a Field so lately fought, and a Coronation so near at hand, he only created Three: James Earl of Pembrook (the King's Uncle) was created Duke of Bedford; Thomas the Lord Stanley (the King's Father-in-Law) Earl of Derby; and Edward Courtney Earl of Devon; though the King had then nevertheless a purpose in himself to make more in time of Parliament; bearing a wise and decent respect to Distribute his Creations, some to honour his Coronation, and some his Parliament.

The Coronation followed two days after upon the Thirtyeth day of October in the year of our Lord 1485. At which time Innocent the Eighth was Pope of Rome, Frederick the Third, Emperour of Almaine; and Maximilian his Son newly chosen King of the Romans; Charles the Eighth, King of France; Ferdinando and Isabella, Kings of Spain; and James the Third, King of Scotland: with all which Kings and States, the King was at that time in good Peace and

Amity. At which Day also (as if the Crown upon his Head, had put Perils into his Thoughts) he did institute sor the better Security of his Person a Band of Fifty Archers under a Captain to attend him, by the name of Yeomen of his Guard: and yet that it might be thought to be rather a matter of Dignity, after the imitation of that he had known abroad, than any matter of Diffidence appropriate to his own Case, he made it to be understood for an Ordinance not Temporary, but to hold in Succession for ever after.

The Seventh of November the King held his Parliament at Westmister, which he had Summoned immediately after his coming to London. His Ends in calling a Parliament (and that so speedily) were chiefly three; First, to procure the Crown to be entayled upon himself. Next, to have the Attaindors of all of his Party (which were in no small Number) reversed, and all Acts of Hostility by them done in his Quarrel, remitted and discharged: and on the other side, to attaint by Parliament, the Heads and Principals of his Enemies. The Third, to calm and quiet the fears of the rest of that Party by a General Pardon: not being ignorant in how great danger a King stands from his Subjects, when most of his Subjects are conscious in themselves, that they stand in his danger. Unto these three special Motives of a Parliament was added, that he as a prudent and moderate Prince, made this Judgement; That it was fit for him to hasten to let his People see, that he meant to govern by Law, howsoever he came in by the Sword: and fit also to reclaim them to know him for their King, whom they had so lately talked of as an Enemy or Banished man. For that which concerned the Entayling of the Crown; (more than that he was true in his own Will, that he would not endure any mention of the Lady Elizabeth: no not in the nature of Special-Intail,) he carried it otherwise with great Wisdom and measure. For he did not press to have the Act penned by way of Declaration or Recognition of Right: as on the other side, he avoided to have it by new Law or Ordinance; but chose rather a kind of middle-way, by way of Establishment, and that under covert and indifferent words; That the inheritance of the Crown should rest, remain, and abide in the King, &c. which words might equally be applied; That the Crown should continue to him: but whether as having former Right to it,

(which was doubtful,) or having it then in Fact and Possession, (which no man denyed,) was left fair to Interpretation either way. And again for the limitation of the Entail, he did not press it to go further than to himself and to the Heirs of his Body, not speaking of his right Heirs; but leaving that to the Law to decide: so as the Entail might seem rather a personal Favour to him and his Children, than a total Dis-inherison to the House of York. And in this form was the Law drawn and passed. Which Statute he procured to be confirmed by the Pope's Bull the year following, with mention nevertheless (by way of Recital) of his other Titles; both of Descent and Conquest. So as now the wreath of Three was made a wreath of Five, for to the three first Titles of the two Houses, or Lines, and Conquest, were added two more; the Authorities Parliamentary and Papal.

The King likewise in the Reversal of the Attaindors of his Partakers, and discharging them of all Offences incident to his service and succour, had his Will: and Acts did pass accordingly. In the passage whereof, exception was taken to divers Persons in the House of Commons, for that they were Attainted, and thereby not legal, nor habilitate to serve in Parliament, being disabled in the highest degree; And that it should be a great incongruity to have them to make Laws, who themselves were not Inlawed. The truth was, that divers of those which had in the time of King Richard been strongest and most declared for the King's Party, were returned Knights and Burgesses for the Parliament, whether by care or recommendation from the State, or the voluntary inclination of the People: many of which had been by Richard the Third attainted by Outlawries, or otherwise. The King was somewhat troubled with this. For though it had a grave and specious Shew, yet it reflected upon his Party. But wisely not shewing himself at all moved therewith, he would not understand it but as a Case of Law; and wished the Judges to be advised thereupon: who for that purpose were forthwith Assembled in the Exchequer-Chamber, (which is the Council-Chamber of the Judges,) and upon deliberation they gave a grave and safe Opinion and Advice, mixed with Law and Convenience; which was, That the Knights and Burgesses attainted by the course of Law, should forbear to come into the House, 'till a Law were passed for the Reversal of their Attaindors.

It was at that time incidently moved amongst the Judges in their Consultation, what should be done for the King himself, who likewise was attainted; But it was with unanimous consent Resolved; That the Crown takes away all defects and stops in Blood: and that from the time the King did assume the Crown, the Fountain was cleared, and all Attaindors and Corruption of Blood discharged. But nevertheless for Honours sake it was Ordained by Parliament, that all Records wherein there was any memory, or mention of the King's Attaindor, should be defaced, cancelled, and taken off the File.

But on the part of the King's Enemies there were by Parliament attainted; the late Duke of Glocester, calling himself Richard the Third, the Duke of Norfolk, the Earl of Surrey, Viscount Lovel, the Lord Ferrers, the Lord Zouch, Richard Ratcliff, William Catesby, and many others of degree and quality. In which Bills of Attaindors, nevertheless there were contained many just and temperate Clauses, Savings and Proviso's, well shewing and foretokening the Wisdom, Stay, and Moderation of the King's Spirit of Government. And for the Pardon of the rest, that had stood against the King; the King, upon a second advice, thought it not fit it should pass by Parliament, the better (being matter of Grace) to impropriate the Thanks to himself: using only the Opportunity of a Parliament time, the better to disperse it into the Veins of the Kingdom. Therefore during the Parliament, he Published his Royal Proclamation, offering Pardon and Grace of Restitution, to all such as had taken Arms, or been participant of any Attempts against him; so as they submitted themselves to his Mercy by a Day, and took the Oath of Allegiance and Fidelity to him. Whereupon many came out of Sanctuary, and many more came out of Fear, no less guilty than those that had taken Sanctuary.

As for Money or Treasure; the King thought it not seasonable, or fit to demand any of his Subjects at this Parliament: both because he had received satisfaction from them in matters of so great Importance, and because he could not remunerate them with any General Pardon, being prevented therein by the CoronationPardon, passed immediately before: but chiefly, for that it was in every mans Eye, what great Forfeitures and Confiscations he had at that present

to help himself: Whereby those Casualties of the Crown might in reason spare the Purses of his Subjects; especially in a time when he was in Peace with all his Neighbours. Some few Laws passed at that Parliament, almost for form sake: amongst which there was One, to reduce Aliens, being made Denizens, to pay Strangers Customs; and another, to draw to himself the Seisures and Compositions of Italian Goods, for not employment, being Points of Profit to his Coffers, whereof from the very Beginning he was not forgetful; and had been more happy at the Latter End, if his early Providence (which kept him from all necessity of Exacting upon his People) could likewise have attemp'red his nature therein. He added during Parliament, to his former Creations, the Innoblement or Advancement in Nobility of a few others: The Lord Chandos of Britain, was made Earl of Bath; and Sir Giles Dawbeny was made Lord Dawbeny; and Sir Robert Willoughby Lord Brook.

The King did also with great Nobleness and Bounty (which Virtues at that time had their turns in his Nature) restore Edward Stafford (eldest Son to Henry, Duke of Buckingham, attainted in the time of King Richard,) not only to his Dignities, but to his Fortunes and Possessions, which were great; to which he was moved also by a kind of Gratitude, for that the Duke was the man that moved the first Stone against the Tyranny of King Richard, and indeed made the King a Bridge to the Crown upon his own Ruins. Thus the Parliament brake up.

The Parliament being dissolved, the King sent forthwith Money to redeem the Marquess Dorset, and Sir John Bourchier, whom he had left as his Pledges at Paris, for Money which he had borrowed, when he made his Expedition for England. And thereupon he took a fit occasion to send the Lord Treasurer and Master Bray (whom he used as Counsellor) to the Lord Mayor of London, requiring of the City a Prest of six thousand Marks: But after many Parlees, he could obtain but two thousand Pounds. Which nevertheless the King took in good part; as men use to do, that practise to borrow Money when they have no need. About this time, the King called unto his PrivyCouncil, John Morton, and Richard Fox, the one Bishop of Ely, the other Bishop of Exceter, vigilant men,

and secret, and such as kept watch with him almost upon all men else. They had been both versed in his Affairs before he came to the Crown, and were partakers of his adverse Fortune. This Morton soon after upon the death of Bourchier', he made Archbishop of Canterbury. And for Fox, he made him Lord Keeper of his Privy-Seal, and afterwards advanced him by Degrees, from Exceter to Bath and Wells, thence to Durham, and last to Winchester. For although the King loved to employ and advance Bishops, because having rich Bishopricks they carried their Reward upon themselves: yet he did use to raise them by steps; that he might not lose the profit of the First-fruits, which by that course of Gradation was multiplied.

At last, upon the Eighteenth of January was Solemnized the so long expected and so much desired Marriage, between the King and the Lady Elizabeth: which Day of Marriage was celebrated with greater Triumph, and Demonstrations (especially on the Peoples part) of Joy and Gladness, than the days either of his Entry, or Coronation; which the King rather noted, than liked. And it is true, that all his life time, while the Lady Elizabeth lived with him, (for she dyed before him) he shewed himself no very indulgent Husband towards her, though she was beautiful, gentle, and fruitful. But his aversion towards the House of York was so predominant in him, as it found place, not only in his Wars and Councils, but in his Chamber and Bed.

Towards the middle of the Spring, the King, full of confidence and assurance, as a Prince that had been Victorious in Battel, and had prevailed with his Parliament in all that he desired, and had the Ring of Acclamations fresh in his Ears, thought the rest of his Reign should be but Play, and the enjoying of a Kingdom. Yet as a wise and watchful King, he would not neglect any thing for his Safety; thinking nevertheless to perform all things now, rather as an Exercise, than as a Labour. So he being truly informed, that the Northern parts were not only Affectionate to the House of York, but particularly had been Devoted to King Richard the Third, thought it would be a Summer well spent to visit those Parts, and by his presence and application of himself, to reclaim and rectifie those Humours. But the King, in his accompt of Peace, and Calms, did much

overcast his Fortunes, which proved for many Years together full of Broken Seas, Tides, and Tempests. For he was no sooner come to Lincoln, where he kept his Easter, but he received news, that the Lord Lovel, Humphrey Stafford, and Thomas Stafford (who had formerly taken Sanctuary at Colchester) were departed out of Sanctuary, but to what place, no man could tell. Which advertisement, the King despised, and continued his Journey to York. At York there came fresh. and more certain advertisement, that the Lord Lovel was at hand with a great power of men, and that the Staffords were in Arms in Worcestershire, and had made their approaches to the City of Worcester, to assail it. The King, as a Prince of great and profound Judgement, was not much moved with it; for that he thought it was but a Ragg or Remnant of Bosworth-Field, and had nothing in it of the main Party of the House of York. But he was more doubtful of the raising of Forces to resist the Rebels, than of the Resistance it self; for that he was in a Core of People, whose affections he suspected. But the Action enduring no delay, he did speedily levy and sent against the Lord Lovel to the number of three thousand men, ill armed, but well assured, (being taken some few out of his own Train, and the rest out of the Tenants and Followers of such as were safe to be trusted,) under the Conduct of the Duke of Bedford. And as his manner was to send his Pardons rather before the Sword than after, he gave Commission to the Duke, to proclaim Pardon to all that would come in: Which the Duke, upon his approach to the Lord Lovel's Camp, did perform. And it fell out as the King expected; the Heralds were the GreatOrdnance. For the Lord Lovel, upon Proclamation of Pardon, mistrusting his men, fled into Lancashire, and lurking for a time with Sir Thomas Broughton, after sailed over into Flanders, to the Lady Margaret. And his men, forsaken of their Captain, did presently submit themselves to the Duke. The Staffords likewise, and their Forces, hearing what had happened to the Lord Lovel (in whose Success their chief Trust was) despaired, and dispersed. The two Brothers, taking Sanctuary at Colnham, a Village near Abington; which Place, upon view of their Priviledge in the King's Bench, being judged no sufficient Sanctuary for Traytors, Humphrey was Executed at Tyburn; and

Thomas, as being led by his elder Brother, was Pardoned. So this Rebellion proved but a Blast; and the King having by this Journey purged a little the Dregs and Leaven of the Northern People, that were before in no good affection towards him, returned to London.

In September following, the Queen was delivered of her first Son, whom the King (in Honour of the British-Race, of which himself was) named Arthur, according to the Name of that ancient worthy King of the Britains; in whose Acts there is truth enough to make him Famous, besides that which is Fabulous. The Child was strong and able, though he was Born in the eighth Month, which Physicians do prejudge.

THere followed this Year, being the Second of the King's Reign, a strange Accident of State, whereof the Relations which we have, are so naked, as they leave it scarce credible; not for the nature of it, (for it hath fallen out oft,) but for the manner and circumstance of it, especially in the beginnings. Therefore we shall make our Judgement upon the things themselves, as they give light one to another, and (as we can) dig Truth out of the Mine. The King was green in his Estate; and contrary to his own Opinion, and Desert both, was not without much Hatred throughout the Realm. The root of all, was the discountenancing of the House of York, which the general Body of the Realm still affected. This did alienate the Hearts of the Subjects from him dayly more and more, especially when they saw, that after his Marriage, and after a Son born, the King did nevertheless not so much as proceed to the Coronation of the Queen, not vouchsafing her the Honour of a Matrimonial Crown; for the Coronation of Her was not 'till almost two Years after, when Danger had taught him what to do. But much more, when it was spread abroad (whether by Errour, or the cunning of Malecontents) that the King had a purpose to put to death Edward Plantagenet closely in the Tower: Whose case was so neerly parallel'd with that of Edward the Fourth's Children, in respect of the blood, like age, and the very place of the Tower, as it did refresh and reflect upon the King a most odious resemblance, as if he would be another King Richard. And all this time it was still whispered every where, that at least one of the Children of Edward the Fourth was living.

Which Bruit was cunningly fomented by such as desired Innovation. Neither was the King's nature and customs greatly fit to disperse these Mists; but contrary-wise he had a fashion rather to create Doubts, than Assurance. Thus was Fuel prepared for the Spark: the Spark that afterwards kindled such a Fire, and Combustion, was at the first contemptible.

There was a subtil Priest called Richard Simon, that lived in Oxford, and had to his Pupil a Baker's Son named Lambert Simnel, of the age of some Fifteen years; a comely Youth, and wellfavoured, not without some extraordinary dignity and grace of Aspect. It came into this Priest's fancy (hearing what men talked, and in hope to raise himself to some great Bishoprick,) to cause this Lad to counterfeit and Personate the second Son of Edward the Fourth, supposed to be murthered; and afterward (for he changed his intention in the manage) the Lord Edward Plantagenet then Prisoner in the Tower, and accordingly to frame him and instruct him in the Part he was to play. This is that which (as was touched before) seemeth scarcely credible: Not that a false Person should be assumed to gain a Kingdom, for it hath been seen in antient and late times; nor that it should come into the mind of such an abject Fellow, to enterprise so great a matter for high Conceits do sometime come streaming into the Imaginations of base persons, especially when they are drunk with News and Talk of the People. But here is that which hath no apparance; That this Priest being utterly unacquainted with the true Person, according to whose pattern he should shape his Counterfeit, should think it possible for him to instruct his Player, either in gesture and fashions, or in recounting past matters of his Life and Education; or to fit Answers to Questions, or the like, any ways to come near the Resemblance of him whom he was to represent. For this Lad was not to personate one, that had been long before taken out of his Cradle, or conveyed away in his Infancy, known to few; but a Youth that 'till the age almost of Ten years had been brought up in a Court where infinite Eyes had been upon him. For King Edward touched with remorse of his Brother the Duke of Clarence's Death, would not indeed restore his Son, (of whom we speak) to be Duke of Clarence, but yet created him Earl of Warwick, reviving his Honour on the Mothers side, and used

him honorably during his time, though Richard the Third afterwards confined him. So that it cannot be, but that some great Person, that knew particularly, and familiarly Edward Plantagenet, had a hand in the business, from whom the Priest might take his aim. That which is most probable, out of the precedent and subsequent Acts, is, that it was the Queen Dowager, from whom this Action had the principal source and motion. For certain it is, she was a busie negotiating Woman, and in her withdrawing-Chamber had the fortunate Conspiracy for the King against King Richard the Third, been hatched; which the King knew, and remembred perhaps but too well; and was at this time extremely discontent with the King, thinking her Daughter (as the King handled the matter) not advanced, but depressed: and none could hold the Book so well to prompt and instruct this Stage-play, as she could. Nevertheless it was not her meaning; nor no more was it the meaning of any of the better and sager sort that favoured the Enterprize and knew the Secret, that this disguised Idol should possess the Crown; but at his peril to make way to the Overthrow of the King: and that done, they had their several Hopes and Ways. That which doth chiefly fortifie this Conjecture, is, that as soon as the matter brake forth in any strength, it was one of the King's first Acts to cloister the Queen Dowager in the Nunnery of Bermonsey, and to take away all her Lands and Estate; and this by close Council without any Legal proceeding, upon far-fetcht Pretences; That she had delivered her two Daughters out of Sanctuary to King Richard, contrary to promise. Which Proceeding being even at that time taxed for rigorous and undue, both in-matter and manner, makes it very probable there was some greater matter against her, which the King upon reason of Policy, and to avoid Envy would not publish. It is likewise no small Argument that there was some Secret in it, and some suppressing of Examinations; for that the Priest Simon himself, after he was taken, was never brought to Execution, no not so much as to publick Tryal, (as many Clergy-men were upon less Treasons,) but was only shut up close in a Dungeon. Add to this, that after the Earl of Lincoln (a principal Person of the House of York) was slain in Stoke-field, the King opened himself to some of his Council, that he was sorry

for the Earl's Death, because by him (he said) he might have known the bottom of his Danger.

But to return to the Narration it self; Simon did first instruct his Scholar for the part of Richard Duke of York, second Son to King Edward the Fourth, and this was at such time as it was voyced that the King purposed to put to Death Edward Plantagenet Prisoner in the Tower, whereat there was great murmur. But hearing soon after a general bruit that Plantagenet had escaped out of the Tower, and thereby finding him so much beloved amongst the People, and such rejoycing at his Escape, the cunning Priest changed his Copy, and chose now Plantagenet to be the Subject his Pupil should personate, because he was more in the present speech, and Votes of the People; and it pieced better, and followed more close and handsomly upon the bruit of Plantagenet's Escape. But yet doubting that there would be too near looking and too much Perspective into his Disguise; if he should shew it here in England; he thought good (after the manner of Scenes in Stage-Plays and Masques) to shew it a-far-off; and therefore sailed with his Scholar into Ireland, where the Affection to the House of York was most in height. The King had been a little Improvident in matters of Ireland, and had not removed Officers and Chancellors, and put in their places, or at least intermingled persons, of whom he stood assured, as he should have done, since he knew the strong Bent of that Countrey towards the House of York; and that it was a ticklish and unsetled State, more easie to receive distempers and mutations, than England was. But trusting to the reputation of his Victories and Successes in England, he thought he should have time enough to extend his Cares afterwards to that second Kingdom.

Wherefore through this neglect, upon the coming of Simon with his pretended Plantagenet into Ireland, all things were prepared for Revolt and Sedition, almost as if they had been set and plotted beforehand. Simon's first Address was to the Lord Thomas Fitz-Gerard, Earl of Kildare, and Deputy of Ireland: before whose Eyes he did cast such a Mist, (by his own insinuation, and by the carriage of his Youth, that expressed a natural Princely Behaviour;) as joyned perhaps with some inward Vapours of Ambition and Affection in the Earl's own mind, left

him fully possessed, that it was the true Plantagenet. The Earl presently communicated the matter with some of the Nobles and others there, at the first secretly. But finding them of like Affection to himself, he suffered it of purpose to vent and pass abroad; because they thought it not safe to resolve, till they had a tast of the Peoples Inclination. But if the Great ones were in forwardness, the People were in fury, entertaining this Airy Body or Phantasm with incredible affection; partly out of their great devotion to the House of York; partly out of a proud humour in the Nation, to give a King to the Realm of England. Neither did the Party in this heat of affection much trouble themselves with the Attaindor of George Duke of Clarence; having newly learned by the King's example, that Attaindors do not interrupt the conveying of Title to the Crown. And as for the Daughters of King Edward the Fourth, they thought King Richard had said enough for them: and took them to be but as of the King's Party, because they were in his power, and at his disposing. So that with marvellous consent and applause, this Counterfeit Plantagenet was brought with great Solemnity to the Castle of Dublin, and there saluted, served and honoured as King; the Boy becoming it well, and doing nothing that did bewray the baseness of his condition. And within few days after he was proclaimed King in Dublin, by the Name of King Edward the Sixth; there being not a Sword drawn in King Henry his Quarrel.

The King was much moved with this unexpected Accident, when it came to his Ears, both because it strook upon that String which ever he most , as also because it was stirred in such a Place, where he could not with safety transfer his own Person, to suppress it. For partly through natural Valour, and partly through an universal Suspition (not knowing whom to trust) he was ever ready to wait upon all his Atchievements in person. The King therefore first called his Council together at the Charterhouse at Shine. Which Council was held with great secresie, but the open Decrees thereof, which presently came abroad, were three.

The first was, That the Queen Dowager, for that she contrary to her Pact and Agreement with those that had concluded with her concerning the Marriage of her Daughter Elizabeth with King Henry, had nevertheless delivered her

Daughters out of Sanctuary into King Richard's hands; should be Cloystered in the Nunnery of Bermonsey, and forfeit all her Lands and Goods.

The next was, That Edward Plantagenet then Closeprisoner in the Tower, should be in the most publick and notorious manner, that could be devised, shewed unto the People: In part to discharge the King of the Envy of that opinion and bruit, how he had been put to death privily in the Tower; But chiefly to make the People see the levity and imposture of the Proceedings of Ireland, and that their Plantagenet was indeed but a Puppet, or a Counterfeit.

The third was, That there should be again Proclaimed a General-Pardon to all that would reveal their Offences, and submit themselves by a Day. And that this Pardon should be conceived in so ample and liberal a manner, as no High-Treason (no not against the King's own Person) should be excepted. Which though it might seem strange, yet was it not so to a wise King, that knew his greatest dangers were not from the least Treasons, but from the greatest. These Resolutions of the King and his Council were immediately put in execution. And first, the Queen Dowager was put into the Monastery of Bermonsey, and all her Estate seized into the King's hands, whereat there was much wondering; That a weak Woman, for the yielding to the menaces and promises of a Tyrant, after such a distance of time, (wherein the King had shewed no displeasure, nor alteration,) but much more after so happy a Marriage, between the King and her Daughter, blessed with Issue-male, should upon a sudden mutability or disclosure of the King's mind be so severely handled.

This Lady was amongst the Examples of great variety of Fortune. She had first from a distressed Suitor, and desolate Widow, been taken to the Marriage-Bed of a Batchelor-King, the goodliest Personage of his time; and even in his Reign she had endured a strange Eclipse by the King's flight, and temporary depriving from the Crown. She was also very happy, in that she had by him fair Issue, and continued his Nuptial Love (helping her self by some obsequious bearing and dissembling of his Pleasures) to the very end. She was much affectionate to her own Kindred, even unto Faction; which did stir great Envy in the Lords of the King's side, who counted her Blood a disparagement to be

mingled with the King's. With which Lords of the King's Blood, joyned also the King's Favorite the Lord Hastings; who, notwithstanding the King's great affection to him, was thought at times through her malice and spleen, not to be out of danger of falling. After her Husband's death, she was matter of Tragedy, having lived to see her Brother beheaded, and her two Sons deposed from the Crown, bastarded in their Blood, and cruelly murthered. All this while nevertheless she enjoyed her Liberty, State, and Fortunes. But afterwards again, upon the Rise of the wheel, when she had a King to her Son-in-Law, and was made Grand-mother to a Grand-child of the best Sex; yet was she (upon dark and unknown Reasons, and no less strange Pretences) precipitated, and banished the World, into a Nunnery; where it was almost thought dangerous to visit her, or see her; and where not long after she ended her Life: but was by the King's commandment Buried with the King her Husband at Windsor. She was Foundress of Queens-College in Cambridge. For this Act the King sustained great Obloquy, which nevertheless (besides the reason of State) was somewhat sweetned to him by a great Confiscation.

About this time also Edward Plantagenet was upon a Sunday brought throughout all the principal Streets of London, to be seen of the people. And having passed the view of the Streets, was conducted to St. Paul's Church, in solemn Procession, where great store of people were assembled. And it was provided also in good fashion, that divers of the Nobility, and others of Quality (especially of those that the King most suspected, and knew the person of Plantagenet best) had communication with the young Gentleman by the way, and entertained him with speech and discourse; which did in effect marr the Pageant in Ireland with the Subjects here, at least with so many, as out of Errour, and not out of Malice, might be mis-led. Nevertheless, in Ireland (where it was too late to go back) it wrought little or no effect. But contrariwise, they turned the Imposture upon the King, and gave out, That the King, to defeat the true Inheritor, and to mock the World, and blind the Eyes of simple men, had tricked up a in the likeness of Edward Plantagenet, and shewed him to the People, not

sparing to prophane the Ceremony of a Procession, the more to countenance the Fable.

The General-Pardon likewise near the same time came forth; and the King therewithal omitted no diligence, in giving straight Order, for the keeping the Ports; that Fugitives, Malecontents, or suspected Persons might not pass over into Ireland, and Flanders,

Mean while the Rebels in Ireland had sent privy Messengers both into England, and into Flanders, who in both places had wrought effects of no small Importance. For in England they won to their Party John, Earl of Lincoln, Son of John de la Pole, Duke of Suffolk, and of Elizabeth, King Edward the Fourth's eldest Sister. This Earl was a man of great Wit and Courage, and had his thoughts highly raised by Hopes and Expectations for a time. For Richard the Third had a Resolution, out of his hatred to both his Brethren, King Edward, and the Duke of Clarence, and their Lines, (having had his hand in both their Bloods,) to disable their Issues upon false and incompetent pretexts; the one, of Attaindor; the other, of Illegitimation: and to design this Gentleman (in case himself should dye without Children) for Inheritor of the Crown. Neither was this unknown to the King, who had secretly an Eye upon him. But the King having tasted of the Envy of the People, for his Imprisonment of Edward Plantagenet, was doubtful to heap up any more distasts of that kind, by the Imprisonment of De la Pole also; the rather thinking it Policy to conserve him as a Corrival unto the other. The Earl of Lincoln was induced to participate with the Action of Ireland, not lightly upon the strength of the Proceedings there, which was but a Bubble, but upon Letters from the Lady Margaret of Burgundy, in whose succours and declaration for the Enterprize, there seemed to be a more solid Foundation, both for Reputation and Forces. Neither did the Earl refrain the Business, for that he knew the pretended Plantagenet to be but an Idol. But contrariwise, he was more glad it should be the false Plantagenet than the true: because the false being sure to fall away of himself, and the true to be made sure of by the King; it might open and pave a fair and prepared way to his own Title. With this Resolution he sayled secretly into Flanders; where was a little before

arrived the Lord Lovel, leaving a correspondence here in England with Sir Thomas Broughton, a man of great Power and Dependencies in Lancashire. For before this time, when the pretended Plantagenet was first received in Ireland, secret Messengers had been also sent to the Lady Margaret, advertising her what was passed in Ireland, imploring Succours in an Enterprize (as they said) so pious and just, and that God had so miraculously prospered the beginning thereof; and making offer, that all things should be guided by her will and direction, as the Sovereign Patroness and Protectress of the Enterprize. Margaret was second Sister to King Edward the Fourth, and had been second Wife to Charles, sirnamed the Hardy, Duke of Burgundy; by whom, having no Children of her own, she did with singular care and tenderness intend the Education of Philip and Margaret, Grand-children to her former Husband; which won her great Love and Authority among the Dutch. This Princess (having the Spirit of a Man, and Malice of a Woman) abounding in Treasure, by the greatness of her Dower, and her provident Government, and being childless, and without any nearer Care, made it her Design and Enterprize, to see the Majesty Royal of England once again re-placed in her House, and had set up King Henry as a Mark, at whose Overthrow all her Actions should aim and shoot; in-so-much as all the Counsels of his succeeding Troubles came chiefly out of that Quiver. And she bare such a mortal Hatred to the House of Lancaster, and personally to the King, as she was no ways mollified by the Conjunction of the Houses in her Neeces Marriage, but rather hated her Neece, as the means of the King's ascent to the Crown, and assurance therein. Wherefore with great violence of affection she embraced this Overture: And upon Counsel taken with the Earl of Lincoln, and the Lord Lovel, and some other of the Party, it was resolved with all speed, the two Lords assisted with a Regiment of two thousand Almains, being choice and veterane Bands under the Command of Martin Swart (a valiant and experimented Captain) should pass over into Ireland to the new King. Hoping, that when the Action should have the face of a received and setled Regality, (with such a second Person, as the Earl of Lincoln, and the Conjunction and Reputation of Forein Succors,) the Fame of it would embolden and prepare all

the Party of the Confederates and Malecontents within the Realm of England, to give them Assistance, when they should come over there. And for the Person of the Counterfeit, it was agreed, that if all things succeeded well, he should be put down, and the true Plantagenet received: Wherein nevertheless the Earl of Lincoln had his particular hopes. After they were come into Ireland, and that the Party took courage, by seeing themselves together in a Body, they grew very confident of success, conceiving and discoursing amongst themselves, that they went in upon far better Cards to overthrow King Henry, than King Henry had to overthrow King Richard. And that if there were not a Sword drawn against them in Ireland, it was a sign the Swords in England would be soon sheathed, or beaten down. And first, for a Bravery upon this accession of Power, they Crowned their new King in the in the Cathedral Church of Dublin; who formerly had been but Proclaimed only; and then sate in Council what should further be done. At which Council, though it were propounded by some, that it were the best way to Establish themselves first in Ireland, and to make that the Seat of the War, and to draw King Henry thither in Person, by whose absence, they thought there would be great Alterations and Commotions in England, yet because the Kingdom there was poor, and they should not be able to keep their Army together, nor pay their German Soldiers, and for that also the sway of the Irish-men, and generally of the Men-ofWar, which (as in such cases of popular Tumults is usual) did in effect govern their Leaders, was eager, and in affection to make their Fortunes upon England: It was concluded with all possible speed to transport their Forces into England. The King in the mean time, who at the first when he heard what was done in Ireland, though it troubled him, yet thought he should be well enough able to scatter the Irish as a Flight of Birds, and rattle away this Swarm of Bees, with their King; when he heard afterwards that the Earl of Lincoln was embarqued in the Action, and that the Lady Margaret was declared for it, he apprehended the danger in a true Degree as it was, and saw plainly that his Kingdom must again be put to the Stake, and that he must fight for it. And first, he did conceive, before he understood of the Earl of Lincoln’s sayling into Ireland out of Flanders, that he should be assailed both upon the

East-parts of the Kingdom of England by some impression from Flanders, and upon the Northwest out of Ireland. And therefore having ordered Musters to be made in both Parts, and having provisionally designed two Generals, Jasper Earl of Bedford, and John Earl of Oxford, (meaning himself also to go in person, where the Affairs should most require it,) and nevertheless not expecting any actual Invasion at that time (the Winter being far on) he took his journey himself towards Suffolk and Norfolk, for the confirming of those parts. And being come to St. Edmonds-bury, he understood, that Thomas, Marquess Dorset (who had been one of the Pledges in France) was hastning towards him, to purge himself of some Accusations which had been made against him. But the King, though he kept an Ear for him, yet was the time so doubtful, that he sent the Earl of Oxford to meet him, and forthwith to carry him to the Tower; with a fair Message nevertheless, that he should bear that disgrace with patience, for that the King meant not his hurt, but only to preserve him from doing hurt, either to the King's service, or to himself; and that the King should always be able (when he had cleared himself) to make him reparation.

From St. Edmonds-bury he went to Norwich, where he kept his Christmas. And from thence he went (in a manner of Pilgrimage) to Walsingham, where he visited our Ladies Church, famous for Miracles, and made his Prayers and Vows for help and deliverance. And from thence he returned by Cambridge to London. Not long after, the Rebels with their King (under the Leading of the Earl of Lincoln, the Earl of Kildare, the Lord Lovel, and Colonel Swart) landed at Fouldrey in Lancashire, whither there repaired to them, Sir Thomas Broughton, with some small company of English. The King by that time (knowing now the Storm would not divide, but fall in one place) had levied Forces in good number; and in person (taking with him his two designed Generals, the Duke of Bedford, and the Earl of Oxford) was come on his way towards them as far as Coventry, whence he sent forth a Troop of Light-horsmen for discovery, and to intercept some straglers of the Enemies, by whom he might the better understand the particulars of their Progress and purposes, which was accordingly done; though the King otherwise was not without Intelligence from Espials in the Camp.

The Rebels took their way towards York, without spoiling the Countrey, or any act of Hostility, the better to put themselves into favour of the People, and to personate their King: who (no doubt, out of a Princely feeling) was sparing, and compassionate towards his Subjects. But their Snow-ball did not gather as it went. For the People came not in to them: Neither did any rise or declare themselves in other parts of the Kingdom for them, which was caused partly by the good tast that the King had given his People of his Government, joyned with the reputation of his Felicity, and partly for that it was an odious thing to the People of England, to have a King brought in to them upon the shoulders of Irish and Dutch, of which their Army was in substance compounded. Neither was it a thing done with any great Judgement on the Party of the Rebels, for them to take their way towards York: Considering that howsoever those parts had formerly been a Nursery of their Friends; yet it was there, where the Lord Lovel had so lately disbanded, and where the King's presence had a little before qualified discontents. The Earl of Lincoln, deceived of his hopes of the Countries concourse unto him, (in which case he would have temporized,) and seeing the business past Retract, resolved to make on where the King was, and to give him Battel; and thereupon, marched towards Newark, thinking to have surprised the Town. But the King was somewhat before this time come to Nottingham, where he called a Council of War, at which was consulted, whether it were best to protract time, or speedily to set upon the Rebels. In which Council the King himself (whose continual vigilancy did suck in sometimes causeless Suspitions, which few else knew) inclined to the accelerating a Battel. But this was presently put out of doubt, by the great Aids that came in to him in the instant of this Consultation, partly upon Missives, and partly Voluntaries from many parts of the Kingdom.

The principal persons that came then to the King's aid, were the Earl of Shrewsbury, and the Lord Strange, of the Nobility; and of Knights and Gentlemen to the number of at least Threescore and ten persons, with their Companies, making in the whole, at the least Six Thousand fighting men, besides the Forces that were with the King before. Whereupon the King, finding

his Army so bravely re-enforced, and a great alacrity in all his men to fight, was confirmed in his former Resolution, and marched speedily, so as he put himself between the Enemies Camp and Newark; being loth their Army should get the commodity of that Town. The Earl nothing dismayed, came forwards that day unto a little Village called Stoke, and there camped that night, upon the brow or hanging of a Hill. The King the next day presented him Battel upon the Plain, the fields there being open and champion. The Earl couragiously came down and joyned Battel with him. Concerning which Battel, the Relations that are left unto us are so naked and negligent, (though it be an Action of so recent memory) as they rather declared the Success of the day, than the Manner of the Fight. They say, that the King divided his Army into three Battels, whereof the Vaunt-guard only well strengthned with Wings, came to fight. That the Fight was fierce and obstinate, and lasted three hours, before the Victory inclined either way; save that Judgement might be made, by that the King's Vaunt-guard of it self maintained fight against the whole Power of the Enemies, (the other two Battels remaining out of action,) what the success was like to be in the end: That Martin Swart with his Germans performed bravely; and so did those few English that were on that side, neither did the Irish fail in courage or fierceness, but being almost naked men, only armed with Darts and Skeins, it was rather an Execution, than a Fight upon them; insomuch as the furious slaughter of them was a great discouragement and appalement to the rest: That there dyed upon the place all the Chieftains; that is, the Earl of Lincoln, the Earl of Kildare, Francis Lord Lovel, Martin Swart, and Sir Thomas Broughton; all making good the fight, without any ground given. Only of the Lord Lovel there went a report, that he fled and swam over Trent on horseback, but could not recover the further side, by reason of the steepness of the Bank, and so was drowned in the River. But another report leaves him not there, but that he lived long after in a Cave or Vault. The number that was slain in the field, was of the Enemies part, Four thousand at the least; and of the King's part, one half of his Vaunt-guard, besides many hurt, but none of name. There were taken Prisoners, amongst others, the Counterfeit Plantagenet (now Lambert Simnel again) and the crafty Priest his

Tutor. For Lambert, the King would not take his Life, both out of Magnanimity, taking him but as an Image of Wax, that others had tempered and molded; and likewise out of Wisdom, thinking that if he suffered death, he would be forgotten too soon; but being kept alive, he would be a continual Spectacle, and a kind of remedy against the like Inchantments of People, in time to come. For which cause he was taken into service in his Court, to a base office in his Kitchin; so that (in a kind of Mattacina of humane fortune) he turned a Broach, that had worn a Crown: Whereas Fortune commonly doth not bring in a Comedy or Farce after a Tragedy. And afterwards he was preferred to be one of the King's Falconers. As to the Priest, he was committed Closeprisoner, and heard of no more, the King loving to seal up his own dangers.

After the Battel, the King went to Lincoln, where he caused Supplications and Thanksgivings to be made for his Deliverance and Victory. And that his Devotions might go round in Circle, he sent his Banner to be Offered to our Lady of Walsingham, where before he made his Vows. And thus delivered of this so strange an Engin and new Invention of Fortune, he returned to his former confidence of mind, thinking now, that all his misfortunes had come at once. But it fell out unto him according to the Speech of the common People in the beginning of his Reign, that said; It was a token he should reign in Labour, because his Reign began with a sickness of Sweat. But howsoever the King thought himself now in a Haven, yet such was his Wisdom, as his Confidence did seldom darken his Foresight, especially in things near hand. And therefore awakened by so fresh, and unexpected dangers, he entred into due consideration, as well how to weed out the Partakers of the former Rebellion, as to kill the Seeds of the like in time to come: and withal to take away all shelters and harbours for discontented Persons, where they might hatch and foster Rebellions, which afterwards might gather strength and motion. And first, he did yet again make a Progress from Lincoln to the Northern parts, though it were indeed rather an Itinerary Circuit of Justice, than a Progress. For all along as he went, with much severity and strict inquisition, partly by Martial Law, and partly by Commission, were punished, the Adherents and Ayders of the late Rebels: not

all by Death, (for the Field had drawn much blood,) but by Fines and Ransoms, which spared Life, and raised Treasure. Amongst other Crimes of this nature, there was diligent inquiry made of such as had raised and dispersed a bruit and rumour, a little before the Field fought, That the Rebels had the day; and that the King's Army was overthrown, and the King fled. Whereby it was supposed that many Succours, which otherwise would have come unto the King, were cunningly put off, and kept back. Which Charge and Accusation, though it had some ground, yet it was industriously embraced and put on by divers, who having been in themselves not the best affected to the King's part, nor forward to come to his ayd, were glad to apprehend this colour, to cover their neglect and coldness, under the pretence of such discouragements. Which cunning nevertheless, the King would not understand, though he lodged it, and noted it in some particulars, as his manner was.

But for the extirpating of the roots and causes of the like Commotions in time to come, the King began to find where his shooe did wring him, and that it was his depressing of the House of York, that did rancle and fester the Affections of his People. And therefore being now too wise to disdain perils any longer, and willing to give some contentment in that kind (at least in Ceremony) he resolved at last to proceed to the Coronation of his Queen. And therefore at his coming to London, where he entred in State, and in a kind of Triumph, and celebrated his Victory, with two days of Devotion, (for the first day he repaired to St. Pauls, and had the Hymn of Te Deum sung, and the morrow after he went in Procession, and heard the Sermon at the Cross,) the Queen was with great solemnity Crowned at Westminster, the five and twentyeth of November, in the third year of his Reign, which was about two years after the Marriage; Like an old Christning, that had staid long for Godfathers. Which strange and unusual distance of time, made it subject to every man's note, that it was an Act against his stomach, and put upon him by necessity and reason of State. Soon after, to shew that it was now fair weather again, and that the Imprisonment of Thomas Marquess Dorset, was rather upon suspition of the Time, than of the Man, he the said Marquess was set at liberty without Examination, or other circumstance. At

that time also the King sent an Ambassador unto Pope Innocent, signifying unto him this his Marriage, and that now (like another Aeneas) he had passed through the floods of his former Troubles and Travels, and was arrived unto a safe Haven: and thanking His Holiness, that he had honoured the Celebration of his Marriage with the presence of his Ambassador, and offering both his Person and the Forces of his Kingdom upon all occasions to do him service.

The Ambassador, making his Oration to the Pope, in the presence of the Cardinals, did so magnifie the King and Queen, as was enough to glut the Hearers. But then he did again so extol and deifie the Pope, as made all that he had said in praise of his Master and Mistress seem temperate and passable. But he was very honorably entertained, and extremely much made on by the Pope; who knowing himself to be lazy and unprofitable to the Christian World, was wonderfully glad to hear that there were such Eccho's of him sounding in remote parts. He obtained also of the Pope a very just and honorable Bull, qualifying the Priviledges of Sanctuary, (wherewith the King had been extremely galled) in three Points.

The first, that if any Sanctuary-man did by night, or otherwise, get out of Sanctuary privily, and commit mischief and trespass, and then come in again, he should lose the benefit of Sanctuary for ever after. The second, that howsoever the Person of the Sanctuary-man was protected from his Creditors, yet his Goods out of Sanctuary should not. The third, that if any took Sanctuary for case of Treason, the King might appoint him Keepers to look to him in Sanctuary.

The King also for the better securing of his Estate, against mutinous and male-contented Subjects (whereof he saw the Realm was full) who might have their refuge into Scotland, which was not under Key, as the Ports were: For that cause, rather than for any doubt of Hostility from those parts, before his coming to London (when he was at Newcastle) had sent a solemn Ambassage unto James the Third, King of Scotland, to treat and conclude a Peace with him. The Ambassadors were Richard Fox Bishop of Exceter, and Sir Richard Edgcomb Comptroller of the King's House, who were honourably received and entertained there. But the King of Scotland labouring of the same disease that King Henry

did, (though more mortal, as afterwards appeared) that is, Discontented Subjects, apt to rise, and raise Tumult, although in his own affection he did much desire to make a Peace with the King: Yet finding his Nobles averse, and not daring to displease them, concluded only a Truce for seven years; giving nevertheless promise in private, that it should be renewed from time to time, during the two Kings lives.

HItherto the King had been exercised in setling his Affairs at home. But about this time brake forth an occasion that drew him to look abroad, and to hearken to forein business. Charles the Eighth the French King, by the virtue and good fortune of his two immediate Predecessors, Charles the Seventh his Grand-father, and Lewis the Eleventh his Father, received the Kingdom of France in more flourishing and spread Estate, than it had been of many years before; being redintegrate in those principal Members, which antiently had been portions of the Crown of France, and were after dissevered, so as they remained only in Homage, and not in Sovereignty, (being governed by absolute Princes of their own) Anjou, Normandy, and Burgundy; there remained only Britain to be re-united, and so the Monarchy of France to be reduced to the antient Terms and Bounds.

King Charles was not a little inflamed with an ambition to re-purchase, and re-annex that Dutchy. Which his ambition was a wise and well-weighed Ambition; not like unto the ambitions of his succeeding Enterprizes of Italy. For at that time being newly come to the Crown, he was somewhat guided by his Father's Counsels, (Counsels, not Counsellors) for his Father was his own Counsel, and had few able men about him. And that King (he knew well) had ever distasted the Designs of Italy, and in particular had an Eye upon Britain. There were many circumstances that did feed the Ambition of Charles, with pregnant and apparent hopes of Success. The Duke of Britain old, and entred into a Lethargy, and served with Mercenary Counsellors, Father of two only Daughters, the one sick and not likely to continue. King Charles himself in the flower of his age, and the Subjects of France at that time well trained for War, both for Leaders and Soldiers; men of service being not yet worn out, since the

Wars of Lewis against Burgundy. He found himself also in Peace with all his Neighbour-Princes. As for those that might oppose to his Enterprize; Maximilian King of the Romans, his Rival in the same desires, (as well for the Dutchy, as the Daughter) feeble in means; and King Henry of England as well somewhat obnoxious to him for his favours and benefits, as busied in his particular troubles at home. There was also a fair and specious occasion offered him to hide his Ambition, and to justifie his Warring upon Britain, for that the Duke had received and succoured Lewis Duke of Orleance, and other of the French Nobility; which had taken Arms against their King. Wherefore King Charles being resolved upon that War, knew well he could not receive any opposition so potent, as if King Henry should either upon Policy of State, in preventing the growing Greatness of France; or upon gratitude unto the Duke of Britain, for his former favours, in the time of his distress, espouse that Quarrel, and declare himself in ayd of the Duke. Therefore he no sooner heard that King Henry was setled by his Victory, but forth with he sent Ambassadors unto him, to pray his assistance, or at the least that he would stand neutral. Which Ambassadors found the King at Leicester, and delivered their Embassy to this effect: They first imparted unto the King the success that their Master had had a little before against Maximilian, in recovery of certain Towns from him: which was done in a kind of privacy, and inwardness towards the King; and if the French King did not esteem him for an outward or formal Confederate, but as one that had part in his Affections and Fortunes, and with whom he took pleasure to communicate his Business. After this Compliment, and some gratulation for the King's Victory, they fell to their Errand; declaring to the King, that their Master was enforced to enter into a just and necessary War with the Duke of Britain, for that he had received and succoured those that were Traytors, and declared Enemies unto his Person and State. That they were no mean, distressed, and calamitous persons that fled to him for refuge, but of so great quality, as it was apparent that they came not thither to protect their own fortune, but to infest and invade his; the Head of them being the Duke of Orleance, the first Prince of the Blood, and the second Person of France. That therefore, rightly to understand it, it was

rather on their Master's part a Defensive War, than an Offensive; as that, that could not be omitted or forborn, if he tendred the conservation of his own Estate; and that it was not the first Blow that made the War Invasive, (for that no wise Prince would stay for) but the first Provocation, or at least the first Preparation. Nay that this War was rather a suppression of Rebels, than a War with a just Enemy, where the Case is; That his Subjects, Traytors, are received by the Duke of Britain his Homager. That King Henry knew well what went upon it in example, if Neighbour Princes should patronize and comfort Rebels, against the Law of Nations and of Leagues. Nevertheless that their Master was not ignorant, that the King had been beholding to the Duke of Britain in his adversity; as on the other side, they knew he would not forget also the readiness of their King, in ayding him when the Duke of Britain, or his mercenary Counsellors failed him, and would have betrayed him; And that there was a great difference between the courtesies received from their Master, and the Duke of Britain; for that the Dukes might have ends of Utility and Bargain, whereas their Masters could not have proceeded but out of entire Affection. For that, if it had been measured by a politick line, it had been better for his affairs, that a Tyrant should have reigned in England, troubled and hated, than such a Prince, whose virtues could not fail to make him great and potent, whensoever he was come to be Master of his affairs. But howsoever it stood for the point of Obligation, which the King might owe to the Duke of Britain, yet their Master was well assured, it would not divert King Henry of England from doing that, that was just, nor ever embarque him in so ill-grounded a Quarrel. Therefore, since this War which their Master was now to make, was but to deliver himself from imminent dangers, their King hoped the King would shew the like affection to the conservation of their Master's Estate, as their Master had (when time was) shewed to the King's acquisition of his Kingdom. At the least, that according to the inclination which the King had ever professed of Peace, he would look on, and stand Neutral; for that their Master could not with reason press him to undertake part in the War, being so newly setled and recovered from intestine Seditions. But touching the Mystery of re-annexing of the Dutchy of Britain to the Crown of France, either by War, or by

Marriage with the Daughter of Britain; the Ambassadors bare aloof from it, as from a Rock, knowing that it made most against them. And therefore by all means declined any mention thereof, but contrariwise interlaced in their conference with the King, the assured purpose of their Master, to match with the Daughter of Maximilian; And entertained the King also with some wandring Discourses of their King's purpose, to recover by Arms his right to the Kingdom of Naples, by an expedition in Person; All to remove the King from all-jealousie of any Design, in these hither Parts upon Britain, otherwise than for quenching of the Fire, which he feared might be kindled in his own Estate.

The King after advice taken with his Council, made answer to the Ambassadors. And first returned their Compliment, shewing he was right glad of the French King's reception of those Towns from Maximilian. Then he familiarly related some particular passages of his own Adventures and Victory passed. As to the business of Britain, the King answered in few words; That the French King and the Duke of Britain, were the two persons to whom he was most obliged of all men; and that he should think himself very happy, if things should go so between them, as he should not be able to acquit himself in gratitude towards them both; and that there was no means for him as a Christian King and a common Friend to them, to satisfie all Obligations both to God and man, but to offer himself for a Mediator of an Accord and Peace between them; by which course he doubted not but their King's Estate, and Honour both, would be preserved with more Safety and less Envy than by a War, and that he would spare no cost or pains, no if it were To go on Pilgrimage, for so good an effect; And concluded, that in this great Affair, which he took so much to heart, he would express himself more fully by an Ambassage, which he would speedily dispatch unto the French King for that purpose. And in this sort the French Ambassadors were dismissed; the King avoiding to understand any thing touching the re-annexing of Britain, as the Ambassadors had avoided to mention it; save that he gave a little touch of it in the word, Envy. And so it was, that the King was neither so shallow, nor so ill advertised, as not to perceive the intention of the French, for the investing himself of Britain. But first he was

utterly unwilling (howsoever he gave out) to enter into War with France. A Fame of a War he liked well, but not an Atchievement; for the one he thought would make him Richer, and the other Poorer: and he was possessed with many secret fears, touching his own People, which he was therefore loth to arm, and put Weapons into their hands. Yet notwithstanding (as a prudent and couragious Prince) he was not so averse from a War, but that he was resolved to choose it, rather than to have Britain carried by France, being so great and opulent a Dutchy, and situate opportunely to annoy England, either for Coast, or Trade. But the King's hopes were, that partly by negligence, commonly imputed to the French, (especially in the Court of a young King) and partly by the native, power of Britain it self, which was not small; but chiefly in respect of the great Party, that the Duke of Orleance had in the Kingdom of France, and thereby means to stir up Civil troubles, to divert the French King from the Enterprize of Britain: And lastly, in regard of the Power of Maximilian, who was Cotrival to the French King in that pursuit, the Enterprize would either bow to a Peace, or break in it self. In all which, the King measured and valued things amiss, as afterwards appeared. He sent therefore forth with to the French King, Christopher Urswick, his Chaplain, a person by him much trusted and employed; choosing him the rather, because he was a Church-man, as best sorting with an Embassy of Pacification: and giving him also a Commission, That if the French King consented to Treat, he should thence repair to the Duke of Britain, and ripen the Treaty on both parts. Urswick made declaration to the French King, much to the purpose of the King's answer to the French Ambassadors here; instilling also tenderly some overture of receiving to grace the Duke of Orleance, and some tasted of Conditions of Accord. But the French King on the other side proceeded not sincerely, but with a great deal of art and dissimulation, in this Treaty; having for his end to gain time, and so put off the English Succours, under hope of Peace, till he had got good footing in Britain, by force of Arms. Wherefore he answered the Ambassador, That he would put himself into the King's hands, and make him Arbiter of the Peace: and willingly consent, that the Ambassador should straightways pass into Britain, to signifie this his , and to know the

Duke's mind likewise; well foreseeing, that the Duke of , by whom the Duke of Britain was wholly led, taking himself to be upon terms irreconcilable with him, would admit of no Treaty of Peace. Whereby he should in one, both generally abroad veil over his Ambition, and win the reputation of just and moderate proceedings; and should withal endear himself in the of the King of England, as one, that had committed all to his Will: Nay, and (which was yet more fine) make faith in him, That although he went on with the War, yet it should be but with his Sword in his hand, to bend the stiffness of the other party to accept of Peace: and so the King should take no umbrage of his arming and prosecution; but the Treaty to be kept on foot, to the very last instant, till he were Master of the Field.

Which grounds being by the French King wisely laid, all things fell out as he expected. For when the English Ambassador came to the Court of Britain, the Duke was then scarcely perfect his memory, and all things were directed by the Duke of Orleance; who gave audience to the Chaplain Urswick, and upon his Ambassage delivered, made answer in somewhat high terms, That the Duke of Britain having been an Host, and a kind of Parent or Foster-father to the King, in his tenderness of age, and weakness of fortune, did look for at this time from King Henry (the renowned King of England) rather brave Troops for for his Succours, than a vain Treaty of Peace. And if the King could forget the good Offices of the Duke done unto him ; yet he knew well, he would in his Wisdom consider of the future, how much it imported his own Safety and Reputation, both in Foreign parts, and with his own People, not to suffer Britain (the old Confederates of England) to be swallowed up by France, and so many good Ports, and strong Towns upon the Coast, be in the command of so potent a Neighbour-King, and so ancient an Enemy. And therefore humbly desired the King to think of this business as his own; and therewith brake off, and denyed any further Conference for Treaty.

Urswick returned first to the French King, and related to him what had passed. Who finding things to sort to his desire, took hold of them, and said; That the Ambassador might perceive now, that which he for his part, partly,

imagined before; That considering in what hands the Duke of Britain was, there would be no Peace, but by a mixt Treaty of force and perswasion. And therefore he would go on with the one, and desired the King not to desist from the other. But for his own part, he did faithfully promise, to be still in the King's power, to rule him in the matter of Peace. This was accordingly represented unto the King by Urswick at his return, and in such a fashion, as if the Treaty were in no sort desperate, but rather stayd for a better hour, till the Hammer had wrought, and beat the Party of Britain more pliant. Whereupon there passed continually Pacquets and Dispatches between the two Kings, from the one out of desire, and from the other out of dissimulation, about the negotiation of Peace. The French King meanwhile invaded Britain with great Forces, and distressed the City of Nantes with a strait Siege, and (as one, who though he had no great Judgement, yet had that, that he could Dissemble home) the more he did urge the prosecution of the War, the more he did at the same time, urge the solicitation of the Peace. Insomuch as during the Siege of Nantes, after many Letters and particular Messages, the better to maintain his dissimulation, and to refresh the Treaty, he sent Bernard Daubigney (a person of good quality) to the King, earnestly to desire him, to make an end of the business howsoever.

The King was no less ready to revive and quicken the Treaty; and thereupon sent three Commissioners, the Abbot of Abbington, Sir Richard Tunstal, and Chaplain Urswick formerly employed, to do their utmost endeavours, to manage the Treaty roundly and strongly.

About this time the Lord Woodvile, (Uncle to the Queen) a valiant Gentleman, and desirous of Honour, sued to the King, that he might raise some Power of Voluntaries under-hand, and without licence or pasport (wherein the King might any ways appear) go to the ayd of the Duke of Britain. The King denyed his request, (or at least seemed so to do) and strait Commandment upon him, that he should not stir, for that the King thought his Honour would suffer therein, during a Treaty, to better a Party. Nevertheless this Lord (either being unruly, or out of conceit that the King would not inwardly dislike that, which he would not openly avow) sailed secretly over into the Isle of , whereof he was

Governour, and levied a fair Troop of four hundred men, and with them passed over into Britain, and joyned himself with the Duke's forces. The news whereof when it came to the French Court, put divers Young bloods into such a fury, as the English Ambassadors were not without peril to be outraged. But the French King, both to preserve the Priviledge of Ambassadors, and being conscious to himself, that in the business of Peace, he himself was the greater dissembler of the two, forbad all injuries of fact or word, against their Persons; or Followers. And presently came an Agent from the King, to purge himself touching the Lord Woodvile's going over, using for a principal argument, to demonstrate that it was without his privity, for that the Troops were so small, as neither had the face of a Succour by Authority, nor could much advance the Britains Affairs. To which Message, although the French King gave no full credit, yet he made fair weather with the King, and seemed satisfied. Soon after the English Ambassadors returned, having two of them been likewise with the Duke of Britain, and found things in no other terms, than they were before. Upon their return, they informed the King of the state of the Affairs, and how far the French King was from any true meaning of Peace; and therefore he was now to advise of some other course. Neither was the King himself all this while with credulity meerly, as was generally supposed; but his Errour was not so much facility of belief, as an ill-measuring of the Forces of the other Party.

For (as was partly touched before) the King had cast the business thus with himself. He took it for granted in his own judgement, that the War of Britain, in respect of the strength of the Towns, and of the Party, could not speedily come to a period. For he conceived that the Counsels of a War, that was undertaken by the French King, then Childless, against an Heir-apparent of France, would be very faint and slow. And besides, that it was not possible, but that the state of France should be embroyled with some troubles and in favour of the Duke of Orleance. He conceived likewise, that Maximilian, King of the Romans, was a Prince warlike and potent, who (he made account) would give succours to the Britains roundly. So then judging it would be a work of Time, he laid his Plot, how he might best make use of that Time, for his own affairs. Wherein first he

thought to make his vantage upon his Parliament; knowing that they being affectionate unto the Quarrel of Britain, would give Treasure largely. Which Treasure, as a noise of War might draw forth, so a Peace succeeding might coffer up. And because he knew his People were upon the business, he chose rather to seem to be deceived, and asleep by the French, than to be backward in himself; considering his Subjects were not so fully capable of the reasons of State, which made him hold back. Wherefore to all these purposes he saw no other expedient, than to set and keep on foot a continual Treaty of Peace; laying it down, and taking it up again, as the occurrence required. Besides, he had in consideration the point of Honour in bearing the blessed person of a Pacificator. He thought likewise to make use of the Envy, that the French King met with, by occasion of this War of Britain, in strengthning himself with new Alliances; as namely that of Ferdinando of Spain, with whom he had ever a consent even in Nature and Customs, and likewise with Maximilian, who was particularly interessed. So that in substance he promised himself Money, Honour, Friends, and Peace in the end. But those things were too fine to be fortunate, and succeed in all parts; for that great affairs are commonly too rough and stubborn to be wrought upon by the finer edges, or points of Wit. The King was likewise deceived in his two main grounds. For although he had reason to conceive, that the Council of France would be wary to put the King into a War against the Heir-apparent of France; yet he did not consider, that Charles was not guided by any of the principal of the Blood or Nobility, but by mean men, who would make it their Master-piece, of Credit and Favour, to give venturous Counsols, which no great or wise man durst or would. And for Maximilian, he was thought then a Greater-matter than he was; his unstable and necessitous Courses being not then known.

After Consultation with the Ambassadors, who brought him no other news, than he expected before, (though he would not seem to know it till then) he presently summoned his Parliament, and in open Parliament propounded the Cause of Britain to both Houses, by his Chancellor Morton Archbishop of Canterbury, who spake to this effect:

MY Lords and Masters; The King's Grace our Sovereign Lord, hath commanded me to declare unto you the Causes that have moved him at this time to summon this his Parliament; which I shall do in few words, craving Pardon of his Grace, and you all, if I perform it not as I would.

His Grace doth first of all let you know, that he retaineth in thankful memory the Love and Loyalty shewed to him by you, at your last Meeting, in Establishment of his Royalty; freeing and discharging of his Partakers, and confiscation of his Traytors and Rebels: more than which could not come from Subjects to their Sovereign, in one action. This he taketh so well at your hands, as he hath made it a Resolution to himself to communicate with so loving and well-approved Subjects, in all Affairs that are of publick nature, at home or abroad.

Two therefore are the causes of your present Assembling: the one, a Forein business; the other, matter of Government at home.

The French King (as no doubt ye have heard) maketh at this present hot War upon the Duke of Britain. His Army is now before Nantes, and holdeth it straitly Besieged, being the principal City (if not in Creremony and Preheminence, yet in Strength and Wealth) of that Duchy. Ye may guess at his Hopes, by his attempting of the hardest part of the War first. The cause of this War he knoweth best. He alledgeth the entertaining and succouring of the Duke of Orleance, and some other French Lords, whom the King taketh for his Enemies. Others divine of other Matters. Both parts have by their Ambassadors divers times prayed the King's Ayds: The French King, Ayds or Neutrality; the Britons, Ayds simply; for so their case requireth. The King, as a Christian Prince, and blessed Son of the Holy Church, hath offered himself as a Mediator, to treat a Peace between them. The French King yieldeth to Treat, but will not stay the prosecution of the War. The Britons, that desire Peace most, hearken to it least; not upon considence or stiffness, but upon distrust of true meaning, seeing the War goes on. So as the King, after as much pains and care to effect a Peace, as ever he took in any business, not being able to remove the Prosecution on the one side,

nor the Distrust on the other, caused by that Prosecution, hath let fall the Treaty; not repenting of it, but despairing of it now, as not likely to succeed. Therefore by this Narrative you now understand the state of the Question, whereupon the King prayeth your Advice; which is no other, but whether he shall enter into an auxiliary and defensive War for the Britons, against France.

And the better to open your understandings in this Affair, the King bath commanded me to say somewhat to you from him, of the Persons that do intervene in this Business; and somewhat of the Consequence thereof, as it hath relation to this Kingdom; and somewhat of the Example of it in general: making nevertherless no Conclusion or Judgement of any Point, until his Grace hath received your faithful and politique Advices.

First, for the King our Sovereign himself, who is the principal Person you are to eye in this business; his Grace doth profess, that he truly and constantly desireth to reign in Peace. But his Grace saith, he will neither buy Peace with Dishonour, nor take it up at interest of Danger to ensue; but shall think it a good Change, if it pleased God to change the inward Troubles and Seditions, wherewith he hath been hitherto exercised, into an honourable Forein War. And for the other two Persons in this Action, the French King, and the Duke of Britain, his Grace doth declare unto you, that they be the men, unto whom he is of all other Friends and Allies most bounden: the one having held over him his hand of Protection from the Tyrant; the other having reacht forth unto him his hand of help, for the Recovery of his Kingdom. So that his affection toward them in his natural Person, is upon equal terms. And whereas you may have heard, that his Grace was enforced to fly out of Britain into France, for doubts of being betrayed; his Grace would not in any sort have that reflect upon the Duke of Britain, in defacement of his former benefits: for that he is throughly informed, that it was but the practice of some corrupt persons about him, during the time of his Sickness, altogether without his consent or privity.

But howsoever these things do interess his Grace in his particular, yet he knoweth well that the higher Bond that tyeth him to procure by all means the safety and welfare of his loving Subjects, doth dis-interess him of these

Obligations of Gratitude, otherwise than thus; that if his Grace be forced to make a War, he do it without Passion, or Ambition.

For the consequence of this Action towards this Kingdom, it is much as the French King's intention is. For if it be no more, but to range his Subjects to reason, who bear themselves stout upon the strength of the Duke of Britain, it is nothing to us. But if it be in the French King's purpose, or if it should not be in his purpose, yet if it shall follow all one, as if it were sought, that the French King shall make a Province of Britain, and joyn it to the Crown of France: then it is worthy the consideration, how this may import England, as well in the increasement of the greatness of France, by the addition of such a Countrey, that stretcheth his Boughs unto our Seas, as in depriving this Nation, and leaving it so naked of so firm and assured Confederates, as the Britons have always been. For then it will come to pass, that whereas not long since, this Realm was mighty upon the Continent, first in Territory, and after in Alliance, in respect of Burgundy and Britain, which were Confederates indeed, but dependant Confederates; now the one being already cast, partly into the greatness of France, and partly into that of Austria, the other is like wholly to be cast into the greatness of France, and this Island shall remain confined in effect within the Salt-Waters, and girt about with the Coast-Countries of two mighty Monarchs.

For the Example, it resteth likewise upon the same Question, upon the French King's intent. For if Britain be carried and swallowed up by France, as the World abroad (apt to impute and construe the Actions of Princes to Ambition) conceive it will; then it is an Example very dangerous and universal, that the lesser Neighbour-Estate should be devoured of the greater. For this may be the case of Scotland, towards England; of Portugal, towards Spain; of the smaller Estates of Italy, towards the greater; and so of Germany; or as if some of you of the Commons might not live and dwell safely, besides some of these great Lords. And the bringing in of this Example, will be chiefly laid to the King's charge, as to him that was most interessed and most able to forbid it. But then on the other side, there is so fair a Pretext on the French King's part, (and yet pretext is never wanting to power) in regard the danger imminent to his own

Estate is such; as may make this Enterprize seem rather a work of Necessity, than of Ambition, as doth in reason correct the Danger of the Example. For that the Example of that which is done in a man's own defence, cannot be dangerous; because it is in another's power to avoid it. But in all this business, the King remits himself to your grave and mature Advice, whereupon he purposeth to rely.

This was the effect of the Lord Chancellor's Speech touching the Cause of Britain: For the King had commanded him to carry it so, as to affect the Parliament towards the Business; but without engaging the King in any express Declaration.

The Chancellor went on:

FOR that which may concern the Government at home, the King hath commanded me to say unto you; That he thinketh there was never any King (for the small time that he hath reigned) had greater and juster cause of the two contrary Passions of Joy and Sorrow, than his Grace hath. Joy, in respect of the rare and visible Favours of Almighty GOD in girting the Imperial Sword upon his side; and assisting the same his Sword against all his Enemies: and likewise in blessing him with so many good and loving Servants and Subjects, which have never failed to give him faithful Counsel, ready Obedience, and couragious Defence. Sorrow for that it both not pleased God to suffer him to sheath his Sword, (as he greatly desired, otherwise than for Administration of Justice) but that he hath been forced to draw it so oft, to cut off Trayterous and disloyal Subjects, whom (it seems) God hath left (a few amongst many good) as the Canaanites among the People of Israel to be thorns in their sides, to tempt and try them though the end hath been always (God's Name be blessed therefore) that the Destruction hath faln upon their own Heads.

Wherefore his Grace saith; That he seeth that it is not the Blood spelt in the Field, that will save the Blood in the City not the Marshal's Sword, that will set this Kingdom in perfect Peace: But that the true way is, to stop the Seeds of Sedition and Rebellion in their beginnings; and for that purpose to devise, confirm, and quicken good and wholsom Laws, against Riots and unlawful

Assemblies of People and all Combinations and Confederacies of them; by Liveries, Tokens, and other Badges of Factious dependance; that the Peace of the Land may by these Ordinances, as by Bars of Iron, be soundly bound in and strengthned, and all Force, both in Court, Countrey, and private Houses, be supprest. The care hereof, which so much concern eth your selves, and which the nature of the Times doth instantly calls for his Grace commends to your Wisdoms.

And because it is the King's desire, that this Peace, wherein he hopeth to govern and maintain you, do not bear only'unto you. Leaves for you to sit under the shade of them in Safety; but also should bear you fruit of Riches, Wealth and Plenty: Therefore his Grace prays you to take into consideration matter of Trade, as also the Manufactures of the Kingdom, and to repress the bastard and barren Employment of Moneys, to Usury and unlawful Exchanges, that they may be (as their natural use is) turned upon Commerce, and lawful and Royal Trading. And likewise, that Our People be set on work in Arts and Handycrafts; that the Realm may subsist more of it self; that Idleness be avoided, and the draining out of our Treasure, for Foreign Manufactures, stopped. But you are not to rest here only, but to provide further, that whatsoever Merchandize shall be brought in from beyond the Seas, may be employed upon the Commodities of this Land; whereby the Kingdoms stock of Treasure may be sure to be kept from being diminished, by any over-trading of the Foreiner.

And lastly, because the King is well assured, that you would not have him poor, that wishes you rich; he doubteth not, but that you will have care, as well to maintain his Revenues, of Customs, and all other Natures, as also to supply him with your loving Ayds, if the case shall so require. The rather, for that you know the King is a good Husband, and but a Steward in effect for the Publick; and that what comes from you is but as Moisture drawn from the Earth, which gathers into a Cloud, and falls back upon the Earth again. And you know well, how the Kingdoms about you grow more and more in Greatness, and the Times are stirring; and therefore not fit to find the King with an empty Purse. More I have not to say to you; and wish, that what hath been said, had been better

exprest: But that your Wisdoms and good Affections will supply. GOD bless your Doings.

IT was no hard matter to dispose and affect the Parliament in this Business, as well in respect of the Emulation between the Nations, and the Envy at the late growth of the French Monarchy; as in regard of the Danger, to suffer the French to make their approaches upon England, by obtaining so goodly a Maritim Province, full of Sea-Towns, and Havens, that might do mischief to the English, either by Invasion, or by interruption of Traffick. The Parliament was also moved with the point of Oppression; for although the French seemed to speak Reason, yet Arguments are ever with multitudes too weak for Suspitions. Wherefore they did advise the King roundly to embrace the Britons Quarrel, and to send them speedy Ayds, and with much alacrity and forwardness granted to the King a great rate of Subsidy, in contemplation of these Ayds. But the King both to keep a decency towards the French King, to whom he himself to be obliged, and indeed desirous rather to shew War, than to make it; sent new solemn Ambassadors to intimate unto him, the Decree of his Estates, and to iterate his motion, that the French would desist from Hostilitiy; or if War must follow, to desire him to take it in good part, if at the motion of his People, who were sensible of the cause of the Britons as the ancient Friends, and Confederates, he did send them Succours; with protestation nevertheless, that to save all Treaties and Laws of Friendship, he had limited his Force, to proceed in ayd of the Britons, but in no wise to war upon the French, otherwise than as they maintained the possession of Britain. But before this formal Ambassage arrived, the Party of the Duke had received a great blow, and grew to manifest declination. For near the Town of Saint Alban in Britain, a Battel had been given, where the Britons were overthrown, and the Duke of Orleance, and the Prince of Orange taken Prisoners; there being slain on the Britons part six thousand men, and amongst them the Lord Woodvile, and almost all his Souldiers, valiantly fighting. And of the French part one thousand two hundred, with their Leader, James Galeot, a great Commander.

When the news of this Battel came over into England, it was time for the King (who now had no subterfuge to continue further Treaty, and saw before his Eyes, that Britain went so speedily for lost, contrary to his hopes, knowing also that with his People and Foreiners both, he sustained no small Envy and disreputation for his former delays) to dispatch with all possible speed his Succour into Britain; which he did under the Conduct of Robert Lord Brook, to the number of eight thousand choise men, and well armed; who having a fair wind, in few hours landed in Britain, and joyned themselves forthwith to those Briton Forces, that remained after the Defeat, and marched straight on to find the Enemy, and encamped fast by them. The French wisely husbanding the possession of a Victory, and well acquainted with the Courage of the English, especially when they are fresh, kept themselves within their Trenches, being strongly lodged, and resolved not to give Battel. But meanwhile, to harrass and weary the English, they did upon all advantages set upon them with their Light-horse; wherein nevertheless they received commonly loss, especially by means of the English Archers.

But upon these Atchievements Francis Duke of Britain deceased; an accident that the King might easily have foreseen, and ought to have reckoned upon, and provided for, but that the Point of Reputation, when news first came of the Battel lost, (that somewhat must be done) did over-bear the Reason of War.

After the Duke's decease, the principal persons of Britain, partly bought, partly through faction, put all things into confusion; so as the English not finding Head or Body with whom to joyn their Forces, and being in jealousie of Friends, as well as in danger of Enemies, and the Winter begun, returned home five Months after their landing. So the Battel of Saint Alban, the death of the Duke, and the retire of the English Succours were (after some time) the causes of the loss of that Duchy; which action some accounted as a blemish of the King's Judgement; but most, but as the misfortune of his times.

But howsoever the temporary Fruit of the Parliament in their Ayd and Advice given for Britain, took not, nor prospered not; yet the lasting Fruit of Parliament, which is good and wholesom Laws, did prosper, and doth yet continue to this

day. For according to the Lord Chancellor's admonition, there were that Parliament divers excellent Laws ordained, concerning the Points which the King recommended.

First, the Authority of the StarChamber, which before subsisted by the ancient Common-Laws of the Realm, was confirmed in certain Cases by Act of Parliament. This Court is one of the sagest and noblest Institutions of this Kingdom. For in the distribution of Courts of Ordinary Justice (besides the High Court of Parliament) in which distribution the King's-Bench holdeth the Pleas of the Crown, the Common-Place, Pleas-Civil, the Exchequer-Pleas concerning the King's Revenue, and the Chancery the Pretorian power for mitigating the rigour of Law, in case of extremity, by the conscience of a good man; there was nevertheless always reserved a high and preheminent power to the King's Council, in Causes that might in example, or consequence, concern the state of the Commonwealth, which if they were Criminal, the Council used to sit in the Chamber, called the StarChamber; if Civil, in the White-Chamber, or White-Hall. And as the Chancery had the Pretorian power for Equity, so the StarChamber had the Censorian power for Offences, under the degree of Capital. This Court of StarChamber is compounded of good Elements: for it consisteth of four kinds of Persons, Counsellors, Peers, Prelates, and chief Judges. It discerneth also principally of four kinds of Causes; Forces, Frauds, Crimes various of Stellionate, and the Inchoations or middle, acts towards Crimes capital; or heinous, not actually committed or perpetrated. But that which was principally aimed at by this act was Force, and the two chief Supports of Force, Combination of Multitudes, and Maintenance or Headship of Great persons.

From the general peace of the Countrey, the King's care went on to the peace of the King's House, and the security of his great Officers and Counsellors. But this Law was somewhat of a strange composition and temper; That if any of the King's Servants under the degree of a Lord, do conspire the death of any of the King's Council; or Lord of the Realm, it is made Capital. This Law was thought to be procured by the Lord Chancellor, who being a stern and haughty man, and finding he had some mortal Enemies in Court, provided for his own safety;

drowning the envy of it in a general Law, by communicating the priviledge with all other Counsellors and Peers, and yet not daring to extend it further, than to the King's Servants in Check-roll, lest it should have been too harsh to the Gentlemen, and other Commons of the Kingdom; who might have thought their ancient Liberty, and the clemency of the Laws of England invaded, If the will in any case of Felony should be made the deed. And yet the reason which the Act yieldeth (that is to say, That he that conspireth the death of Counsellors may be thought indirectly, and by a mean conspire the death of the King himself,) is indifferent to all Subjects, as well as to Servants in Court. But it seemeth this sufficed to serve the Lord Chancellor's turn at this time. But yet he lived to need a General Law, for that he grew afterwards as odious to the Countrey, as he was then to the Court.

From the peace of the King's House, the King's care extended to the peace of Private Houses and Families. For there was an excellent Moral Law molded thus; The taking and carrying away of Women forcibly, and against their will (except FemaleWards and Bond-Women) was made Capital. The Parliament wisely and justly conceiving, that the obtaining of Women by force into Possession (howsoever afterwards Assent might follow by Allurements) was but a Rape drawn forth in length, because the first Force drew on all the rest.

There was made also another Law for Peace in general, and repressing of Murthers and Man-slaughters, and was in amendment of the Common Laws of the Realm, being this: That whereas by the Common Law, the King's Suit in case of Homicide, did expect the Year and the Day, allowed to the Parties Suit by way of Appeal; and that it was found by experience, that the Party was many times compounded with, and many times wearied with the Suit, so that in the end such Suit was let fall, and by that time the matter was in a manner forgotten, and thereby Prosecution at the King's Suit by Indictment (which is ever best, Flagrante crimine) neglected; it was Ordained, That the Suit by Indictment might be taken as well at any time within the Year and the Day, as after, not prejudicing nevertheless the Parties Suit.

The King began also then, as well in Wisdom as in Justice to pare a little the Priviledge of Clergy, ordaining, That Clerks convict should be burned in the hand; both because they might taste of some corporal Punishment, and that they might carry a Brand of Infamy. But for this good Acts sake, the King himself was after branded by Perkin's Proclamation, for an execrable breaker of the Rites of Holy Church.

Another Law was made for the better Peace of the Countrey; by which Law the King's Officers and Farmors were to forfeit their Places and Holds, in case of unlawful Retainer, or partaking in Routs and unlawful Assemblies.

These were the Laws that were made for repressing of Force, which those times did chiefly require; and were so prudently framed, as they are found fit for all succeeding times, and so continue to this day.

There were also made good and politick Laws that Parliament against Usury, which is the Bastard-use of Money; And against unlawful Chievances and Exchanges, which is Bastard-Usury; And also for the Security of the King's Customs; And for the Employment of the Procedures of Forein Commodities, brought in by Merchant-strangers, upon the Native-Commodities of the Realm; together with some other Laws of less importance.

But howsoever the Laws made in that Parliament did bear good and wholesom Fruit; yet the Subsidy granted at the same time, bare a Fruit, that proved harsh and bitter. All was inned at last into the King's Barn; but it was after a Storm. For when the Commissioners entred into the Taxation of the Subsidy in Yorkshire, and the Bishoprick of Duresm; the People upon a sudden grew into great mutiny, and said openly, that they had endured of late years a thousand miseries, and neither could nor would pay the Subsidy. This (no doubt) proceeded not simply of any present necessity, but much by reason of the old humour of those Countries, where the memory of King Richard was so strong, that it lyes like Lees in the bottom of mens hearts; and if the Vessel was but stirred, it would come up. And (no doubt) it was partly also by the instigation of some factious Malecontents, that bare principal stroke amongst them. Hereupon the Commissioners being somewhat astonished, deferred the matter unto the Earl

of Northumberland, who was the principal man of Authority in those Parts. The Earl forthwith wrote unto the Court, signifying to the King plainly enough in what flame he found the people of those Countries, and praying the King's direction. The King wrote back peremptorily, That he would not have one penny abated, of that which had been granted to him by Parliament, both because it might encourage other Countries to pray the like Release or Mitigation, and chiefly, because he would never endure, that the base Multitude should frustrate the Authority of the Parliament, wherein their Votes and Consents were concluded. Upon this dispatch from Court, the Earl assembled the principal Justices and Free-holders of the Countrey; and speaking to them in that imperious Language wherein the King had written to him, which needed not, (save that an harsh business was unfortunately fallen into the hands of a harsh man,) did not only irritate the People, but make them conceive, by the stoutness and haughtiness of delivery of the King's Errand; that himself was the Author or principal Perswader of that Counsel. Whereupon the meaner sort routed together, and suddenly assailing the Earl in his house, slew him, and divers of his servants. And rested not there, but creating for their Leader Sir John Egremond, a factious person, and one that had of a long time born an ill Talent towards the King; and being animated also by a base Fellow, called John A Chamber, a very Boutefeu, who bare much sway amongst the vulgar and popular, entred into open Rebellion, and gave out in flat terms that they would go against King Henry, and fight with him for the maintenance of their Liberties.

When the King was advertised of this new Insurrection (being almost a Fever that took him every year) after his manner little troubled therewith, he sent Thomas Earl of Surrey (whom he had a little before not only released out of the Tower, and pardoned, but also received to special favour) with a competent Power against the Rebels; who fought with the principal Band of them, and defeated them, and took alive John A Chamber, their firebrand. As for Sir John Egremond, he fled into Flanders, to the Lady Margaret of Burgundy; whose Palace was the Sanctuary and Receptacle of all Traytors against the King. John A Chamber was Executed at York, in great state; for he was hanged upon a

Gibbet raised a Stage higher in the midst of a square Gallows, as a Traytor paramount; and a number of his men that were his chief Complices, were hanged upon the lower Story round about him; and the rest were generally pardoned. Neither did the King himself omit his custom, to be first or second in all his Warlike Exploits; making good his Word, which was usual with him when he heard of Rebels; that He desired but to see them. For immediately after he had sent down the Earl of Surrey, he marched towards them himself in person. And although in his journey he heard news of the Victory, yet he went on as far as York, to pacifie and settle those Countries. And that done returned to London, leaving the Earl of Surrey for his Lieutenant in the Northern parts, and Sir Richard Tunstal for his principal Commissioner, to levy the Subsidy, whereof he did not remit a Denier.

About the same time that the King lost so good a Servant, as the Earl of Northumberland, he lost likewise a faithful Friend and Allie of James the Third, King of Scotland, by a miserable disaster. For this unfortunate Prince, after a long smother of discontent, and hatred of many of his Nobility and People, breaking forth at times into seditions and alterations of Court, was at last distressed by them, having taken Arms, and surprised the person of Prince James his Son, partly by force, partly by threats that they would otherwise deliver up the Kingdom to the King of England, to shadow their Rebellion, and to be the titular and painted Head of those Arms. Whereupon the King (finding himself too weak) sought unto King Henry, as also unto the Pope, and the King of France, to compose those troubles, between him and his Subjects. The King accordingly interposed their Mediation in a round and Princely manner: Not only by way of request and perswasion, but also by way of protestation of menace; declaring, that they thought it to be the common Cause of all Kings, If Subjects should be suffered to give Laws unto their Sovereign; and that they would accordingly resent it, and revenge it. But the Rebels that had shaken off the greater Yoak of Obedience, had likewise cast away the lesser Tye of Respect. And Fury prevailing above Fear, made answer, That there was no talking of Peace, except the King would resign his Crown. Whereupon (Treaty of Accord

taking no place) it came to a Battel, at Bannocks-bourn by Strivelin. In which Battel, the King transported with wrath and just indignation, inconsiderately fighting and precipitating the charge, before his whole numbers came up to him, was (notwithstanding the contrary express and straight commandment of the Prince his Son) slain in the Pursuit, being fled to a Mill, situate in the field, where the Battel was fought.

As for the Pope's Embassy, which was sent by Adrian de Castello an Italian Legate, (and perhaps, as those times were, might have prevailed more) it came too late for the Embassy, but not for the Ambassador. For passing through England, and being honourably entertained, and received of King Henry; (who ever applied himself with much respect to the See of Rome) he fell into great grace with the King, and great familiarity and friendship with Morton the Chancellor. In so much as the King taking a liking to him, and finding him to his mind, preferred him to the Bishoprick of Hereford, and afterwards to that of Bath and Wells, and employed him in many of his affairs of State, that had relation to Rome. He was a man of great learning, wisdom, and dexterity in business of State; and having not long after ascended to the degree of Cardinal, payd the King large tribute of his gratitude, in diligent and judicious advertisement of the occurrents of Italy. Nevertheless in the end of his time, he was partaker of the conspiracy, which Cardinal Alphonso Petrucci, and some other Cardinals had plotted against the life of Pope Leo. And this offence in it self so heinous, was yet in him aggravated by the motive thereof, which was not malice or discontent, but an aspiring mind to the Papacy. And in this height of impiety there wanted not an intermixture of levity and folly; for that (as was generally believed) he was animated to expect the Papacy, by a fatal mockery, the Prediction of a Soothsayer; which was, That one should succeed Pope Leo, whose name should be Adrian, an aged man of mean birth, and of great learning and wisdom. By which character, and figure, he took himself to be described, though it were fulfilled of Adrian the Fleming, Son of a Dutch Brewer, Cardinal of Tortosa, and Preceptor unto Charles the Fifth, the same that not changing his Christen-name, was afterward called Adrian the Sixth.

But these things happened in the year following, which was the fifth of this King. But in the end of the fourth year the King had called again his Parliament, not as it seemeth for any particular occasion of State. But the former Parliament being ended somewhat suddenly, in regard of the preparation for Britain, the King thought he had not remunerated his People sufficiently with good Laws, which evermore was his Retribution for Treasure. And finding by the Insurrection in the North, there was discontentment abroad, in respect of the Subsidy, he thought it good to give his Subjects yet further contentment, and comfort in that kind. Certainly his times for good Commonwealths Laws did . So as he may justly be celebrated for the best Lawgiver to this Nation, after King Edward the First. For his Laws (who so marks them well) are deep, and not vulgar: not made upon the spur of a particular Occasion for the present, but out of Providence of the future, to make the Estate of his People still more and more happy; after the manner of the Legislators in ancient and Heroical times.

First therefore he made a Law, suitable to his own Acts and Times. For as himself had in his Person and Marriage made a final Concord, in the great Suit and Title for the Crown; so by this Law he setled the like Peace and Quiet in the private Possessions of the Subjects. Ordaining, That Fines thence-forth should be final, to conclude all Strangers Rights; and that upon Fines levied, and solemnly proclaimed, the Subject should have his time of Watch for five years after his Title accrued; which if he forepassed, his Right should be bound for ever after; with some exception nevertheless, of Minors, Married-women, and such incompetent Persons.

This Statute did in effect but restore an ancient Statute of the Realm, which was it self also made but in affirmance of the Common-Law. The alteration had been by a Statute, commonly called the Statute of Nonclaim, made in the time of Edward the Third. And surely this Law was a kind of Prognostick of the good Peace, which since his time hath (for the most part) continued in this Kingdom, until this day. For Statutes of Nonclaim are fit for times of War, when mens heads are troubled, that they cannot intend their Estate; but Statutes, that quiet

Possessions, are fittest for times of Peace, to extinguish Suits and Contentions, which is one of the Banes, of Peace.

Another Statute was made of singular Policy, for the Population apparently, and (if it be throughly considered) for the Soldiery, and Militar Forces of the Realm.

Inclosures at that time began to be more frequent, whereby Arable Land (which could not be manured without People and Families) was turned into Pasture, which was easily rid by a few Herds-men; and Tenancies for Years, Lives, and At Will (whereupon much of the Yeomandry lived) were turned into Demesnes. This bred a decay of People, and (by consequence) a decay of Towns, Churches, Tythes, and the like. The King likewise knew full well, and in no wise forgot, that there ensued withal upon this a decay and diminution of Subsidy and Taxes; for the more Gentlemen, ever the lower Books of Subsidies. In remedying of this inconvenience, the King's Wisdom was admirable, and the Parliaments at that time. Inclosures they would not forbid, for that had been to forbid the improvement of the Patrimony of the Kingdom; nor Tillage they would not compel, for that was to strive with Nature and Utility. But they took a course to take away depopulating Inclosures, and depopulating Pasturage, and yet not by that name, or by any Imperious express Prohibition, but by consequence. The Ordinance was, That all Houses of Husbandry, that were used with twenty Acres of Ground, and upwards, should be maintained and kept up for ever; together with a competent proportion of Land to be used and occupied with them; and in no wise to be severed from them, as by another Statute, made afterwards in his Successors time, was more fully declared. This upon Forfeiture to be taken; not by way of Popular Action, but by seisure of the Land it self, by the King and Lords of the Fee, as to half the Profits, till the Houses and Lands were restored. By this means the Houses being kept up, did of necessity enforce a Dweller; and the proportion of Land for Occupation being kept up, did of necessity enforce that Dweller, not to be a Beggar or Cottager, but a man of some substance, that might keep Hinds and Servants, and set the Plough on goingThis did wonderfully concern the Might and Manner-hood of the

Kingdom, to have Ferms, as it were of a Standard sufficient to maintain an able Body out of Penury, and did in effect amortize a great part of the Lands of the Kingdom unto the Hold and Occupation of the Teomanry or Middle people, of a condition between Gentlemen and Cottagers or Pesants. Now, how much this did advance the Militar power of the Kingdom, is apparent by the true Principles of War, and the examples of other Kingdoms. For it hath been held by the general Opinion of men of best Judgement in the Wars (howsoever some few have varied, and that it may receive some distinction of Case) that the principal strength of an Army consisteth in the Infantry or Foot. And to make good Infantry, it requireth men bred, not in a servile or indigent fashion, but in some free and plentiful manner. Therefore if a State run most to Noblemen and Gentlemen, and that the Husband-men and Plough-men be but as their Work-folks and Labourers, or else meer Cottagers, (which are but Housed-Beggars) you may have a good Cavalry, but never good stable Bands of Foot; like to Coppice-Woods, that if you leave in them Staddles too thick, they will run to Bushes and Bryars, and have little clean Underwood. And this is to be seen in France, and Italy, and some other parts abroad, where in effect all is Nobless, or Pesantry, I speak of people out of Towns, and no middle people; and therefore no good Forces of Foot: In so much, as they are enforced to employ Mercenary Bands, of Switzers and the like, for their Battuilions of Foot; Whereby also it comes to pass, that those Nations have much People, and few Soldiers. Whereas the King saw, that contrariwise it would follow, that England, though much less in Territory, yet should have infinitely more Soldiers of their native Forces, than those other Nations have. Thus did the King secretly sow Hidra's teeth, whereupon (according to the Poets fiction) should rise up Armed men for the service of the Kingdom.

The King also (having care to make his Realm potent, as well by Sea as by Land) for the better maintenance of the Navy, Ordained, That Wines and Woads from the parts of Gascoign and Languedock; should not be brought but in English Bottoms; Bowing the ancient Policy of this Estate, from consideration of Plenty, to consideration of Power. For that almost all the ancient Statutes incite

by all means Merchant-strangers, to bring in all sorts of Commodities; having for end cheapness, and not looking to the point of State concerning the Naval-power.

The King also made a Statute in that Parliament Monitory and Minatory, towards Justices of Peace, that they should duly execute their Office, inviting complaints against them, first to their Fellow Justices, then to the Justices of Assize, then to the King or Chancellor; and that a Proclamation, which he had published of that Tenor, should be read in open Sessions four times a year, to keep them awake. Meaning also to have his Laws executed, and thereby to reap either Obedience or Forfeitures; (wherein towards his latter times he did decline too much to the left hand) he did ordain remedy against the practice that was grown in use, to stop and damp Informations upon Penal Laws, by procuring Informations by collusion to be put in by the Confederates of the Delinquents, to be faintly prosecuted, and let fall at pleasure, and pleading them in Bar of the Informations, which were prosecuted with effect.

He made also Laws for the correction of the Mint, and counterfeiting of Forein Coyn currant. And that no payment in Gold should be made to any Merchant-stranger, the better to keep Treasure within the Realm, for that Gold was the metal that lay in least room.

He made also Statutes for the maintenance of Drapery, and the keeping of Wools within the Realm; and not only so, but for stinting, and limiting the prices of Cloth, one for the finer, and another for the courser sort. Which I note, both because it was a rare thing to set prices by Statute, especially upon our HomeCommodities; and because of the wise Model of the Act, not prescribing Prices, but stinting them not to exceed a rate, that the Clothier might drape accordingly as he might afford.

Divers other good Statutes were made that Parliament, but these were the principal. And here I do desire those, into whose hands this Work shall fall, that they do take in good part my long insisting upon the Laws that were made in this King’s Reign; whereof I have these reasons: Both because it was the preheminent virtue and merit of this King, to whose memory I do honour, and

because it hath some correspondence to my Person; but chiefly, because (in my judgement) it is some defect even in the best Writers of History that they do not often enough summarily deliver and set down the most memorable Laws, that passed in the times whereof they write, being indeed the principal Acts of Peace. For although they may be had in Original Books of Law themselves; yet that informeth not the judgement of Kings and Counsellors, and Persons of Estate, so well as to see them described, and entred in the Table and Pourtrait of the Times.

About the same time, the King had a Loan from the City of Four thousand pounds; which was double to that they lent before, and was duely and orderly payd back at the day, as the former likewise had been; the King ever choosing rather to borrow too soon, than to pay too late, and so keeping up his Credit.

Neither had the King yet cast off his cares and hopes touching Britain, but thought to master the occasion by Policy, though his Arms had been unfortunate, and to bereave the French King of the fruit of his Victory. The summ of his design was, to encourage Maximilian to go on with his suit, for the Marriage of Ann, the Heir of Britain, and to ayd him to the consummation thereof. But the affairs of Maximilian were at that time in great trouble and combustion, by a Rebellion of his Subjects in Flanders; especially those of Bruges and Gaunt, whereof the Town of Bruges (at such time as Maximilian was there in person) had suddenly armed in tumult, and slain some of his principal Officers, and taken himself prisoner, and held him in durance, till they had enforced him, and some of his Counsellors, to take a solemn Oath to pardon all their offences, and never to question and revenge the same in time to come. Nevertheless Frederick the Emperor would not suffer this reproach and indignity offered to his Son to pass, but made sharp Wars upon Flanders, to reclaim and chastise the Rebels. But the Lord Ravenstein, a principal person about Maximilian, and one that had taken the Oath of Abolition with his Master, pretending the Religion thereof, but indeed upon private ambition, and (as it was thought) instigated and corrupted from France, forsook the Emperor and Maximilian his Lord, and made himself an Head of the popular Party, and seized upon the Towns of Ipre and Sluce, with both the Castles; and forthwith sent to the Lord Cordes, Governour of Picardy

under the French King, to desire ayd, and to move him, that he on the behalf of the French King would be Protector of the united Towns, and by force of Arms reduce the rest. The Lord Cordes was ready to embrace the occasion, which was partly of his own setting, and sent forthwith greater Forces, than it had been possible for him to raise on the sudden, if he had not looked for such a summons before, in ayd of the Lord Ravenstein, and the Flemmings, with instructions to invest the Towns between France and Bruges. The French Forces besieged a little Town called Dixmue, where part of the Flemish Forces joyned with them. While they lay at this siege, the King of England, upon pretence of the safety of the English Pale about Calice, but in truth being loth that Maximilian should become contemptible, and thereby be shaken off by the States of Britain about this Marriage, sent over the Lord Morley with a thousand men unto the Lord Daubigny, then Deputy of Calice, with secret instructions to ayd Maximilian, and to raise the siege of Dixmue. The Lord Daubigny (giving it out that all was for the strengthning of the English Marches) drew out of the Garrisons, of Calice, Hammes, and Guines, to the number of a thousand men more. So that with the fresh Succours that came under the Conduct of the Lord Morley, they made up to the number of two thousand, or better. Which Forces joyning with some Companies of Almains, put themselves into Dixmue, not perceived by the Enemies; and passing through the Town with some re-enforcement, (from the Forces that were in the Town) assailed the Enemies Camp, negligently guarded, as being out of fear; where there was a bloody Fight, in which the English and their Partakers obtained the Victory, and slew to the number of eight thousand men, with the loss on the English part of a hundred or thereabouts; amongst whom was the Lord Morley. They took also their great Ordnance, with much rich spoils, which they carried to Newport, whence the Lord Daubigny returned to Calice, leaving the hurt men, and some other Voluntaries in Newport. But the Lord Cordes being at Ipre with a great power of men, thinking to recover the loss and disgrace of the Fight at Dixmue, came presently on, and sate down before Newport and besieged it; and after some days siege, he resolved to try the fortune of an Assault: Which he did one day, and succeeded therein so far, that

he had taken the principal Tower and Fort in that City, and planted upon it the French Banner. Whence nevertheless they were presently beaten forth by the English, by the help of some fresh Succours of Archers arriving by good fortune (at the instant) in the Haven of Newport; Whereupon the Lord Cordes discouraged, and measuring the new Succours (which were small) by the Success, (which was great,) levied his Siege. By this means, matters grew more exasperate between the two Kings of England and France, for that in the War of Flanders, the auxiliary Forces of French and English were much blooded one against another. Which Blood rankled the more, by the vain words of the Lord Cordes, that declared himself an open Enemy of the English, beyond that that appertained to the present Service; making it a common by-word of his, That he could be content to lye in Hell seven years, so he might win Calice from the English.

The King having thus upheld the Reputation of Maximilian, advised him now to press on his Marriage with Britain to a conclusion. Which Maximilian accordingly did, and so far forth prevailed both with the young Lady, and with the principal persons about her, as the Marriage was consummate by Proxy, with a Ceremony at that time in these parts new. For she was not only publickly contracted, but stated as a Bride, and solemnly Bedded; and after she was laid, there came in Maximilian's Ambassador with Letters of Procuration, and in the presence of sundry Noble Personages, Men and Women, put his Leg (stript naked to the Knee) between the Espousal-Sheets; to the end, that that Ceremony might be thought to amount to a Consummation, and actual Knowledge. This done, Maximilian (whose property was to leave things then, when they were almost come to perfection, and to end them by imagination; like ill Archers, that draw not their Arrows up to the Head: and who might as easily have Bedded the Lady himself, as to have made a Play and Disguise of it) thinking now all assured, neglected for a time his further proceeding, and intended his Wars. Meanwhile, the French King (consulting with his Divines, and finding that this pretended Consummation was rather an Invention of Court, than any ways valid by the Laws of the Church) went more really to work, and by secret Instruments

and cunning Agents, as well Matrans about the young Lady, as Counsellors, first sought to remove the point of Religion and Honour out of the mind of the Lady her self, wherein there was a double labour. For Maximilian was not only contracted unto the Lady, but Maximilian's Daughter was likewise contracted to King Charles. So as the Marriage halted upon both feet, and was not clear on either side: But for the Contract with King Charles, the Exception lay plain and fair, for that Maximilian's Daughter was under years of Consent, and so not bound by Law, but a power of Disagreement left to either part. But for the Contract made by Maximilian with the Lady her self, they were harder driven; having nothing to alledge, but that it was done without the consent of her Sovereign Lord, King Charles, whose Ward and Client she was, and he to her in place of a Father; and therefore it was void, and of no force, for want of such Consent. Which defect (they said) though it would not evacuate a Marriage, after Cohabitation, and Actual Consummation, yet it was enough to make void a Contract. For as for a pretended Consummation, they made sport with it, and said; That it was an argument, that Maximilian was a Widdower, and a cold Wooer, that could content himself to be a Bridegroom by Deputy, and would not make a little Journey, to put all out of question. So that the young Lady; wrought upon by these Reasons, finely instilled by such as the French King, (who spared for no Rewards or Promises) had made on his side; and allured likewise by the present Glory and Greatness of King Charles, (being also a young King, and a Batchelor) and loth to make her Countrey the Seat of a long and miserable War; secretly yielded to accept of King Charles: But during this secret Treaty with the Lady, the better to save it from Blasts of Opposition and Interruption, King Charles resorting to his wonted Arts, and thinking to carry the Marriage, as he had carried the Wars, by entertaining the King of England in vain belief, sent a solemn Ambassage by Francis Lord of Luxemberg, Charles Marignian and Robert Gaguein, General of the Order of the Bonnes Hommes of the Trinity, to treat Peace and League with the King; accoupling it with an Article in nature of a Request, that the French King might with the King's good will (according unto his right of Seigniory and Tutelage) dispose of the Marriage of the young

Duchess of Britain, as he should think good; offering by a Judicial proceeding to make void the Marriage of Maximilian by Proxy. Also all this while the better to amuse the World, he did continue in his Court and custody the Daughter of Maximilian, who formerly had been sent unto him, to be bred and educated in France; not dismissing or renvoying her, but contrariwise professing and giving out strongly, that he meant to proceed with that Match. And that for the Duchess of Britain, he desired only to preserve his right of Seigniory, and to give her in Marriage to some such Allie, as might depend upon him.

When the three Commissioners came to the Court of England, they delivered their Ambassage unto the King, who remitted them to his Council; where some days after they had Audience, and made their Proposition by the Prior of the Trinity, (who though he were third in place, yet was held the best Speaker of them) to this effect:

MY Lords, the King our Master, the greatest and mightiest King that reigned in France since Charles the Great, (whose Name he beareth) hath nevertheless thought it no disparagement to his Greatness, at this time to propound a Peace, yea, and to pray a Peace with the King of England. For which purpose he hath sent us his Commissioners instructed and enabled with full and ample power, to treat and conclude; giving us further in charge, to open in some other business the secrets of his own intentions. These be indeed the pretious Love-tokens between great Kings, to communicate one with another the true state of their Affairs, and to pass by nice Points of Honour, which ought not to give Law unto Affection, This I do assure your Lordships; It is not possible for you to imagine the true and cordial Love, that the King our Master beareth to your Sovereign, except you were near him, as we are. He useth his Name with so great respect; he remembreth their first acquaintance at Paris with so great contentment; nay, he never speaks of him, but that presently he falls into discourse of the miseries of great Kings, in that they cannot converse with their Equals, but with Servants. This affection to your King's Person and Virtues, GOD hath put into the Heart of our Master, no doubt for the good of Christendom, and for purposes yet unknown to us all. For other Root it cannot have, since it was the same to the

earl of Richmond, that it is now to the King of England. This is therefore the first motive that makes our King to desire Peace, and League with your Sovereign: Good affection, and somewhat that he finds in his own Heart. This affection is also armed with reason of Estate. For our King doth in all candour and frankness of dealing open himself unto you; that having an honourable, yea, and a Holy purpose, to make a Voyage and War in remote parts, he considereth that it will be of no small effect, in point of Reputation to his Enterprize, if it be known abroad, that he ulin in good peace with all his Neighbour Princes, and specially with the King of England, whom for good causes he esteemeth most.

But now (my Lords) give me leave to use a few words to remove all scruples and miss-understandings, between your Sovereign and ours, concerning some late Actions; which if they be not cleared, may perhaps hinder this Peace. To the end, that for matters past, neither King may conceive unkindness of other, nor think the other conceiveth unkindness of him. The late Actions are two; that of Britain, and that of Flanders. In both which, it is true, that the Subjects swords of both Kings, have encountred and stricken, and the ways and inclinations also of the two Kings, in respect of their Confederates and Allies, have severed.

For that of Britain, The King your Sovereign knoweth best what hath passed. It was a War of necessity on our Masters part. And though the Motives of it were sharp and piquant as could be, yet did be make that War rather with an Olive-branch, than a Laurel-branch in his hand, more desiring Peace than Victory. Besides, from time to time he sent (as it were) Blank-papers to your King, to write the conditions of Peace. For though both his Honour and Safety went upon it, yet he thought neither of them too precious, to put into the King of England's hands. Neither doth our King on the other side make any unfriendly interpretation, of your King's sending of Succours to the Duke of Britain; for the King knoweth well, that many things must be done of Kings for satisfaction of their People, and it is not hard to discern what is a King's own. But this matter of Britain is now (by the Act of GOD) ended and passed; and (as the King hopesh) like the way of a Ship in the Sea, without leaving any impression in either of the Kings minds; as he is sure, for his part, it hath not done in his.

For the Action of Flanders; As the former of Britain was a War of Necessity, so this was a War of Justice; which with a good King is of equal necessity, with danger of Estate, for else he should leave to be a King. The Subjects of Burgundy are Subjects in Chief to the Crown of France, and their Duke the Homager and Vassal of France. They had wont to be good Subjects, howsoever Maximilian hath of late distempered them. They fled to the King for Justice, and deliverance from Oppression. Justice he could not deny; Purchase he did not seek. This was good for Maximilian, if he could have seen it in people mutined, to arrest Fury, and prevent Despair. My Lords, it may be this I have said is needless, save that the King our Master is tender in any thing, that may but glance upon the Friendship of England. The amity between the two Kings (no doubt) stands entire and inviolate. And that their Subjects swords have clashed, it is nothing unto the publick Peace of the Crowns; it being a thing very usual in Auxiliary Forces of the best and straitest Confederates, to meet and draw blood in the Field. Nay, many times there be Ayds of the same Nation on both sides, and yet it is not (for all that) A Kingdom divided in it self.

It resteth (my Lords) that I impart unto you a matter, that I know your Lordships all will much rejoyce to hear; as that which importeth the Christian Commonweal more, than any Action that hath hapned of long time. The King our Master hath a purpose and determination, to make War upon the Kingdom of Naples; being now in the possession of a Bastardship of Arragon, but appertaining unto his Majesty, by clear and undoubted right; which if he should not by just Arms seek to recover, he could neither acquit his Honour, nor answer it to his People. But his Noble and Christian thoughts rest not here. For his Resolution and Hope is, to make the Re-conquest of Naples, but as a Bridge, to transport his Forces into Grecia; and not to spare Blood or Treasure (if it were to the impawning of his Crown, and dis-peopling of France) till either he hath overthrown the Empire of the Ottomans, or taken it in his way to Paradise. The King knoweth well, that this is a design, that could not arise in the mind of any King, that did not stedfastly look up unto GOD, whose quarrel this is, and from whom cometh both the will, and the Deed. But yet it is agreeable to the Person

that he beareth (though unworthy) of the Thrice-Christian King, and the Eldest Son of the Church. Whereunto he is also invited by the Example (in more ancient time) of King Henry the Fourth of England, (the First Renowned King of the House of Lancaster, Ancestor, though not Progenitor to your King) who had a purpose towards the end of his time (as you know better) to make an Expedition into the Holy Land; and by the Example also (present before his eyes) of that Honourable and Religious War which the King of Spain now maketh, and hath almost brought to perfection, for the Recovery of the Realm of Granada from the Moors. And although this Enterprize may seem vast and unmeasured, for the King to attempt that by his own Forces, wherein heretofore a Conjunction of most of the Christian Princes hath found work enough; yet his Majesty wisely considereth, that sometimes smaller Forces being united under one Command, are more effectual in Proof (though not so promising in Opinion and Fame) than much greater Forces, variously propounded by Associations and Leagues; which commonly in a short time after their beginnings, turn to Dissociations and Divisions. But (my Lords) that which is as a Voice from Heaven that called the King to this Enterprize, is a Rent at this time in the House of the Ottomans. I do not say, but there hath been Brother against Brother in that House before, but never any that had refuge to the Arms of the Christians, as now hath Gemes, (Brother unto Bajazeth, that reigneth) the far braver man of the two; the other being between a Monk and a Philosopher, and better read in the Alcoran and Averroes, than able to weild the Scepter of so warlike an Empire. This therefore is the King our Master's memorable and heroical Resolution for an Holy War. And because he carrieth in this the person of a Christian Soldier, as well as of a great Temporal Monarch; he beginneth with Humility, and is content for this cause, to beg Peace at the hands of other Christian Kings. There remaineth only rather a Civil Request, than any essential part of our Negotiation, which the King maketh to the King your Sovereign. The King (as the World knoweth) is Lord in chief of the Duchy of Britain. The Marriage of the Heir belongeth to him as Guardian. This is a private Patrimonial Right, and no business of Estate: yet nevertheless (to run a fair course with your King; whom

he desires to make another Himself, and to be one and the same thing with him) his Request is, That with the King's Favour and Consent, he may dispose of her Marriage, as he thinketh good, and make void the intruded and pretended Marriage of Maximilian, according to Justice. This (my Lords) is all that I have to say, desiring your pardon for my weakness in the delivery.

THus did the French Ambassadors with great shew of their King's affection, and many sugred words seek to adulce all matters between the two Kings, having two things for their ends; The one, to keep the King quiet till the Marriage of Britain was past, and this was but a Summers-fruit, which they thought was almost ripe, and would be soon gathered. The other was more lasting; and that was to put him into such a temper as he might be no disturbance or impediment to the Voyage for Italy. The Lords of the Council were silent; and said only, That they knew the Ambassadors would look for no answer, till they had reported to the King; and so they rose from Council. The King could not well tell what to think of the Marriage of Britain. He saw plainly the ambition of the French King was to impatronize himself of the Duchy; but he wondred he would bring into his House a litigious Marriage, especially considering who was his Successor. But weighing one thing with another, he gave Britain for lost; but resolved to make his profit of this business of Britain, as a quarrel for War; and that of Naples, as a Wrench and mean for Peace; being well advertised, how strongly the King was bent upon that Action. Having therefore conferred divers times with his Council, and keeping himself somewhat close, he gave a direction to the Chancellor, for a formal Answer to the Ambassadors, and that he did in the presence of his Council. And after calling the Chancellor to him apart, bade him speak in such language, as was fit for a Treaty that was to end in a Breach; and gave him also a special Caveat, that he should not use any words, to discourage the Voyage of Italy. Soon after the Ambassadors were sent for to the Council, and the Lord Chancellor spake to them in this sort:

MY Lords Ambassadors, I shall make answer by the King's Commandment, unto the eloquent Declaration of you my Lord Prior, in a brief and plain manner. The King forgetteth not his former love and acquaintance with the King your

Master. But of this there needeth no repetition. For if it be between them as it was, it is well; if there be any alteration, it is not words that will make it up.

For the Business of Britain, the King findeth it a little strange that the French King maketh mention of it, as matter of well-deserving at his hand. For that Deserving was no more, but to make him his Instrument, to surprize one of his best Confederates. And for the Marriage, the King would not meddle in it if your Master would marry by the Book, and not by the Sword.

For that of Flanders, if the Subjects of Burgundy had appealed to your King, as their Chief Lord, at first, by way of Supplication, it might have had a shew of Justice. But it was a new form of Process, for Subjects to imprison their Prince first, and to slay his Officers, and then to be Complainants. The King saith, That sure he is, when the French King, and himself sent to the Subjects of Scotland (that had taken Arms against their King) they both spake in another Stile, and did in Princely manner signifie their detestation of Popular Attentates, upon the Person or Authority of Princes. But my Lords Ambassadors, the King leaveth these two actions thus: That on the one side, he hath not received any manner of satisfaction from you concerning them; and on the other, that he doth not apprehend them so deeply, as in respect of them, to refuse to treat of Peace, if other things may go hand in hand. As for the War of Naples, and the Design against the Turk; the King hath commanded me expresly to say, That he doth wish with all his heart, to his good Brother the French King, that his Fortunes may succeed according to his hopes, and honourable intentions. And whensoever he shall hear, that he is prepared for Grecia, as your Master is pleased now to say, that he beggeth a Peace of the King, so the King will then beg of him a part in that War.

But now my Lords Ambassadors, I am to propound unto you somewhat on the King's part. The King your Master hath taught our King what to say and demand. You say (my Lord Prior) that your King is resolved to recover his right to Naples, wrongfully detained from him. And that if he should not thus do, he could not acquit his Honour, nor answer it to his People. Think (my Lords) that

the King our Master saith the same thing over again to you touching Normandy, Guien, Anjou, yea and the Kingdom of France it self. I cannot express it better than in your own words: If therefore the French King shall consent, that the King our Master's Title to France (at least Tribute for the same) be handled in the Treaty, the King is content to go on with the rest, otherwise he refuseth to Treat.

THE Ambassadors being somewhat abashed with this demand, answered in some heat; That they doubted not, but the King their Sovereign's Sword would be able to maintain his Scepter: And they assured themselves, he neither could nor would yield to any diminution of the Crown of France, either in Territory or Regality. But howsoever, they were too great matters for them to speak of, having no Commission. It was replied, that the King looked for no other answer from them; but would forthwith send his own Ambassadors to the French King. There was a question also asked at the table, Whether the French King would agree to have the disposing of the Marriage of Britain with an exception and exclusion, that he should not marry her himself? To which the Ambassadors answered; That it was so far out of their King's thoughts, as they had received no Instruction touching the same. Thus were the Ambassadors dismissed, all save the Prior; and were followed immediately by Thomas Earl of Ormond, and Thomas Goldenston Prior of Christ-Church in Canterbury, who were presently sent over into France. In the mean space, Lionel Bishop of Concordia, was sent as Nuntio from Pope Alexander the sixth to both Kings, to move a Peace between them. For Pope Alexander finding himself pent and lockt up, by a League and Association of the principal States of Italy, that he could not make his way for the advancement of his own House, (which he immoderately thirsted after) was desirous to trouble the waters in Italy, that he might fish the better; casting the Net, not out of St. Peter's, but out of Borgia's Bark. And doubting lest the fear from England, might stay the French King's voyage into Italy, dispatched this Bishop to compose all matters between the two Kings, if he could. Who first repaired to the French King, and finding him well inclined (as he conceived) took on his Journey towards England, and found the English Ambassadors at Calice, on their way towards the French King. After some

conference with them, he was in honourable manner transported over into England, where he had audience of the King. But notwithstanding he had a good ominous name to have made a Peace, nothing followed. For in the mean time, the purpose of the French King to marry the Duchess could be no longer dissembled. Wherefore the English Ambassadors (finding how things went) took their leave, and returned. And the Prior also was warned from hence, to depart out of England. Who when he turned his back (more like a Pedant, than an Ambassador) dispersed a bitter Libel, in Latin Verse, against the King; unto which the King (though he had nothing of a Pedant) yet was content to cause an answer to be made in like Verse; and that as speaking in his own person, but in a stile of scorn and sport. About this time also was born the King's second Son Henry, who afterward relgned. And soon after followed the solemnization of the Marriage between Charles, and Ann Duchess of Britain, with whom he received the Duchy of Britain as her Dowry; the Daughter of Maximilian being a little before sent home. Which when it came to the ears of Maximilian, (who would never believe it till it was done, being ever the Principal in deceiving himself, though in this the French King did very handsomly second it) and tumbling it over and over in his thoughts, that he should at one blow (with such a double scorn) be defeated, both of the Marriage of his Daughter, and his own (upon both which he had fixed high imaginations;) he lost all patience, and casting off the Respects fit to be continued between great Kings, (even when their blood is hottest, and most risen) fell to bitter Invectives against the person and actions of the French King. And (by how much he was the less able to do, talking so much the more) spake all the Injuries he could devise of Charles, saying; That he was the most Perfidious man upon the earth, and that he had made a Marriage compounded between an Advoutry and a Rape: which was done (he said) by the just judgment of God; to the end, that (the Nullity thereof being so apparent to all the World) the Race of so unworthy a person might not reign in France. And forthwith he sent Ambassadors as well to the King of England as to the King of Spain, to incite them to War, and to treat a League offensive against France, promising to concur with great Forces of his own. Hereupon the King of

England (going nevertheless his own way) called a Parliament, it being the seventh year of his Reign, and the first day of opening thereof, (sitting under his Cloth of Estate) spake himself unto his Lords and Commons, in this manner:

MY Lords, and you the Commons; When I purposed to make a War in Britain by my Lieutenant, I made declaration thereof to you by my Chancellor. But now that I mean to make a War upon France in Person, I will declare it to you my Self. That War, was to defend another man's right, but this is to recever our own; and that ended by Accident, but we hope this shall end in Victory.

The French King troubles the Christian World. That which he hath, is not his own, and yet he seeketh more. He hath invested himself of Britain, he maintaineth the Rebels in Flanders, and he threatneth Italy. For Our Selves, he hath proceeded from Dissimulation to Neglect, and from Neglect to Contumely. He hath assailed our Confederates; he denieth our Tribute; in a word, he seeks War. So did not his Father, but sought Peace at our hands; and so perhaps will be, when good Counsel or Time shall make him see as much as his Father did.

Meanwhile; let us make his Ambition, our Advantage; and let us not stand upon a few Crowns of Tribute, or Acknowledgement, but (by the favour of Almighty GOD) try Our Right for the Crown of France it self; remembring that there hath been a French King Prisoner in England, and a King of England Crowned in France. Our Confederates are not diminished. Burgundy is in a mightier Hand than ever, and never more provoked; Britain cannot help us, but it may hurt them. New Acquests are more Burthen, than Strength. The Malecontents of his own Kingdom have not been Base, Popular, nor Titulary Impostors, but of an higher nature. The King of Spain (doubt ye not) will with us, not knowing where the French King's Ambition will stay. Our Holy Father the Pope, likes no Tramontanes in Italy. But howsoever it be, this matter of Confederates, is rather to be thought on, than reckoned on. (For God forbid; but England should be able to get Reason of France, without a Second.

At the Battels of Cressy, Poictiers, Agent-Court, we were of Our selves. France hath much People, and few Soldiers. They have no stable Bands of Foot: some good Horse they have; but these are Forces, which are least fit for a

Defensive War, where the Actions are in the Assailant's choice. It was our Discords only, that lost France; and (by the Power of GOD) it is the good Peace which we now enjoy, that will recover it. GOD hath hitherto blessed my Sword. I have in this time that I have Reigned, weeded out my bad Subjects, and tryed my good. My People and I know one another; which breeds Confidence. And if there should be any bad Blood left in the Kingdom, an Honourable Forein War will vent it, or purifie it. In this great Business, let me have your Advice, and Ayd. If any of you were to make his Son Knight; you might have ayd of your Tenants by Law. This concerns the Knighthood and Spurs of the Kingdom, whereof I am Father; and bound not only to seek to maintain it, but to advance it. But for matter of Treasure, let it not be taken from the Poorest sort; but from those, to whom the Benefit of the War may redound. France is no Wilderness: and I, that profess good husbandry, hope to make the War (after the Beginnings) to pay it self. Go together in GOD's Name, and lose no time; for I have called this Parliament wholly for this Cause.

THus spake the King. But for all this, though he shewed great forwardness for a War, not only to his Parliament and Court, but to his Privy Council likewise, (except the two Bishops, and a few more) yet nevertheless in his secret intentions, he had no purpose to go through with any War, upon France. But the truth was, that he did but traffick with that War, to make his Return in money. He knew well, that France was now entire, and at unity with it self, and never so mighty many years before. He saw by the tast that he had of his Forces sent into Britain, that the French knew well enough how to make War with the English; by not putting things to the hazard of a Battel, but wearing them by long Sieges of Towns, and strong fortified Encampings. James the Third of Scotland, (his true Friend, and Confederate) gone; and James the Fourth (that had succeeded) wholly at the devotion of France, and ill affected towards him. As for the Conjunctions of Ferdinando of Spain, and Maximilian; he could make no foundation upon them: for the one had Power, and not Will; and the other had Will, and not Power. Besides that, Ferdinando had but newly taken breath, from the War with the Moors; and merchanded at this time with France, for the

restoring of the Counties of Russignon and Perpignian, oppignorated to the French. Neither was he out of fear of the Discontents, and ill blood within the Realm; which having used always to repress and appease in person, he was loth they should find him at a distance beyond Sea, and engaged in War. Finding therefore the Inconveniences and Difficulties in the prosecution of a War, he cast with himself how to compass two things: The one, how by the declaration, and inchoation of a War, to make his Profit; the other, how to come off from the War, with saving of his Honour. For Profit, it was to be made two ways; upon his Subjects for the War, and upon his Enemies for the Peace; like a good Merchant, that maketh his gain, both upon the Commodities Exported, and Imported back again. For the point of Honour, wherein he might suffer, for giving over the War; he considered well, that as he could not trust upon the ayds of Ferdinando and Maximilian for supports of War: so the impuissance of the one, and the double proceeding of the other, lay fair for him for occasions to accept of Peace. These things he did wisely foresee, and did as artificially conduct, whereby all things fell into his lap, as he desired.

For as for the Parliament, it presently took fire, being affectionate (of old) to the War of France; and desirous afresh to repair the dishonour, they thought the King sustained by the loss of Britain. Therefore they advised the King (with great alacrity) to undertake the War of France. And although the Parliament consisted of the first and second Nobility, (together with principal Citizens and Townsmen) yet worthily and justly respecting more the People (whose Deputies they were) than their own private Persons, and finding by the Lord Chancellor's Speech the King's inclination that way; they consented that Commissioners should go forth, for the gathering and levying of a Benevolence, from the more able sort. This Tax (called Benevolence) was devised by Edward the Fourth, for which he sustained much Envy. It was abolished by Richard the Third, by Act of Parliament, to ingratiate himself with the people; and it was now revived by the King, but with consent of Parliament, for so it was not in the time of King Edward the Fourth. But by this way he raised exceeding great summs. Insomuch as the City of London (in those days) contributed nine thousand pounds and

better, and that chiefly levied upon the wealthier sort. There is a Tradition of a Dilemma, that Bishop Morton the Chancellor used, to raise up the Benevolence to higher Rates; and some called it his Fork, and some his Crotch. For he had couched an Article in the Instructions to the Commissioners, who were to levy the Benevolence; That if they met with any that were sparing, they should tell them, That they must needs have, because they laid up; and if they were spenders, they must needs have, because it was seen in their port, and manner of living. So neither kind came amiss.

This Parliament was meerly a Parliament of War; for it was in substance, but a Declaration of War against France and Scotland, with some Statutes conducing thereunto; As the severe punishing of Mortpayes, and keeping back of Soldiers Wages in Captains. The like severity for the departure of Soldiers without licence; Strengthning of the Common Law in favour of Protections, for those that were in the King's service; And the setting the gate open and wide, for men to Sell or Mortgage their Lands without Fines for Alienation, to furnish themselves with Money for the War; And lastly, the avoiding of all Scottish-men out of England. There was also a Statute, for the dispersing of the Standard of the Exchequer, throughout England; thereby to size Weights and Measures; and two or three more of less importance.

After the Parliament was broken up (which lasted not long) the King went on with his Preparations for the War of France; yet neglected not in the mean time the affairs of Maximilian, for the quieting of Flanders, and restoring him to his Authority amongst his Subjects. For at that time, the Lord of Ravenstein being not only a Subject rebelled, but a Servant revolted, (and so much the more malicious and violent, by the ayd of Bruges and Ghent) had taken the Town, and both the Castles of Sluyce; as we said before.

And having (by the commodity of the Haven) gotten together certain Ships and Barques, fell to a kind of Pyratical trade; robbing and spoyling, and taking Prisoners the Ships and Vessels of all Nations, that passed alongst that Coast, towards the Mart of Antwerp, or into any part of Brabant, Zealand, or Friesland; being ever will victualled from Picardy, besides the commodity of Victuals from

Sluyce, and the Countrey adjacent, and the avails of his own Prizes. The French assisted him still under-hand; and he likewise (as all men do, that have been of both sides) thought himself not safe, except he depended upon a third Person.

There was a small Town some two miles from Bruges, towards the Sea, called Dam; which was a Fort and Approch to Bruges, and had a relation also to Sluyce. This Town the King of the Romans had attempted often, (not for any worth of the Town in it self, but because it might choak Bruges, and cut it off from the Sea) and ever failed. But therewith the Duke of Saxony came down into Flanders, taking upon him the person of an Umpire, to compose things between Maximilian and his Subjects; but being (indeed) fast and assured to Maximilian. Upon this Pretext of Neutrality and Treaty, he repaired to Bruges; desiring the States of Bruges, to enter peaceably into their Town, with a Retinue of some number of men of Arms, fit for his Estate, being somewhat the more (as he said) the better to guard him in a Countrey, that was up in Arms: and bearing them in hand, that he was to communicate with them of divers matters of great importance, for their good. Which having obtained of them, he sent his Carriages and Harbingers before him, to provide his Lodging. So that his Men of War entred the City in good Array, but in peaceable manner, and he followed. They that went before, enquired still for Inns and Lodgings, as if they would have rested there all night, and so went on, till they came to the Gate, that leadeth directly towards Dam; and they of Bruges only gazed upon them, and gave them passage. The Captains and inhabitants of Dam also suspected no harm, from any that passed through Bruges; and discovering Forces a-far-off, supposed they had been some Succours, that were come from their Friends, knowing some Dangers towards them. And so perceiving nothing but well, till it was too late, suffered them to enter their Town. By which kind of Sleight, rather than Stratagem, the Town of Dam was taken, and the Town of Bruges shrewdly blockt up, whereby they took great discouragement.

The Duke of Saxony having won the Town of Dam, sent immediately to the King, to let him know that it was Sluyce chiefly, and the Lord Ravenstein, that

kept the Rebellion of Flanders in life; And that if it pleased the King to besiege it by Sea, he also would besiege it by Land, and so cut out the Core of those Wars.

The King willing to uphold the Authority of Maximilian, (the better to hold France in awe) and being likewise sued unto by his Merchants, for that the Seas were much infested by the Barques of the Lord Ravenstein; sent straightways Sir Edward Poynings, a valiant man, and of good service, with twelve Ships, well furnished with Soldiers and Artillery, to clear the Seas, and to besiege Sluyce on that part. The Englishmen did not only coop up the Lord Ravenstein, that he stirred not, and likewise hold in strait Siege the Maritim part of the Town; but also assailed one of the Castles, and renewed the assault so for twenty days space (issuing still out of their Ships at the Ebb) as they made great slaughter of them of the Castle; who continually fought with them to repulse them, though of the English part also were slain a Brother of the Earl of Oxford's, and some fifty more.

But the Siege still continuing more and more strait, and both the Castles (which were the principal strength of the Town) being distressed, the one by the Duke of Saxony, and the other by the English; and a Bridge of boats, which the Lord Ravenstein had made between both Castles, whereby Succours and Relief might pass from the one to the other, being on a night set on fire by the English, he despairing to hold the Town, yielded (at the last) the Castle to the English, and the Town to the Duke of Saxony, by composition. Which done, the Duke of Saxony and Sir Edward Poynings treated with them of Bruges, to submit themselves to Maximilian their Lord; which after some time they did, paying (in some good part) the Charge of the War, whereby the Almains and foreln Succours were dismissed. The example of Bruges, other of the Revolted Towns followed, so that Maximilian grew to be out of danger, but (as his manner was to handle matters) never out of necessity. And Sir Edward Poynings (after he had continued at Sluyce some good while, till all things were setled) returned unto the King, being then before Bulloign.

Somewhat about this time came Letters from Ferdinando, and Isabella, King and Queen of Spain; signifying the final Conquest of Granada from the Moors;

which action in it self so worthy, King Ferdinando, (whose manner was never to lose any virtue for the shewing) had expressed and displayed in his Letters at large, with all the particularities, and Religious Puncto's and Ceremonies, that were observed in the reception of that City and Kingdom: Shewing amongst other things, That the King would not by any means in person enter the City, until he had first aloof seen the Cross set up upon the greater Tower of Granada, whereby it became Christian ground: That likewise before he would enter, he did Homage to God above, pronouncing by an Herald from the height of that Tower, that he did acknowledge to have recovered that Kingdom, by the help of God Almighty and the glorious Virgin, and the virtuous Apostle St. James, and the holy Father Innocent the Eighth, together with the ayds and services of his Prelates, Nobles and Commons: That yet he stirred not from his Camp, till he had seen a little Army of Martyrs, to the number of seven hundred and more Christians (that had lived in bonds and servitude, as Slaves to the Moors) pass before his Eyes, singing a Psalm for their redemption, and that he had given Tribute unto God by alms, and relief, extended to them all, for his admission into the City. These things were in the Letters, with many more Ceremonies of a kind of Holy Ostentation.

The King ever willing to put himself into the consort or Choir of all Religious actions, and naturally affecting much the King of Spain, (as far as one King can affect another) partly for his virtues, and partly for a counterpoise to France; upon the receipt of these Letters, sent all his Nobles and Prelates, that were about the Court, together with the Mayor and Aldermen of London, in great solemnity to the Church of St. Pauls; there to hear a Declaration from the Lord Chancellor, now Cardinal. When they were assembled, the Cardinal (standing upon the uppermost step, or half-pace before the Chair; and all the Nobles, Prelates, and Governours of the City at the foot of the stairs) made a Speech to them; letting them know, that they were assembled in that Consecrate place, to sing unto God a New-song; For that (said he) these many years the Christians have not gained new ground or Territory upon the Infidels, nor enlarged and set further the Bounds of the Christianworld: But this is now done, by the prowess and

devotion of Ferdinando and Isabella, Kings of Spain; who have (to their immortal Honour) recovered the great and rich Kingdom of Granade, and the populous and mighty City of the same name, from the Moors, having been in possession thereof by the space of seven hundred years and more. For which, this Assembly and all Christians are to render laud and thanks unto God, and to celebrate this noble Act of the King of Spain; who in this is not only Victorious, but Apostolical, in the gaining of new Provinces to the Christian Faith. And the rather, for that this victory and Conquest is obtained, without much effusion of blood. Whereby it is to be hoped, that there shall be gained, not only new Territory, but infinite Souls, to the Church of Christ; whom the Almighty (as it seems) would have live to be converted. Herewithal he did relate some of the most memorable particulars of the War and Victory. And after his Speech ended, the whole assembly went solemnly in Procession, and Te Deum was sung.

Immediately after the Solemnity, the King kept his May-day at his Palace of Shein, now Richmond. Where to warm the blood of his Nobility, and Gallants, against the War, he kept great Triumphs of Justing and Tourney, during all that Month. In which space it so fell out, that Sir James Parker, and Hugh Vaughan, (one of the King's Gentlemen-Ushers) having had a controversie touching certain Arms, that the King at Arms had given Vaughan, were appointed to run some Courses one against another. And by accident of a faulty Helmet, that Parker had on, he was stricken into the mouth at the first Course, so that his tongue was born unto the hinder part of his head, in such sort that he died presently upon the place. Which because of the Controversie precedent, and the Death that followed, was accounted among the Vulgar, as a Combat or Tryal of Right. The King, towards the end of this Summer, having put his Forces, wherewith he meant to invade France, in readiness, (but so as they were not yet met or mustered together) sent Urswick (now made his Almoner) and Sir John Risley, to Maximilian; to let him know, that he was in Arms, ready to pass the Seas into France, and did but expect to hear from him, when and where he did appoint to joyn with him, according to his promise made unto him by Countebal, his Ambassador.

The English Ambassadors, having repaired to Maximilian, did find his power and promise at a very great distance; he being utterly unprovided of Men, Money, and Arms, for any such enterprize. For Maximilian, having neither Wing to flie on (for that his Patrimony of Austria was not in his hands, his Father being then living: And on the other side, his Matrimonial Territories of Flanders being partly in Dowre to his Mother-in-law, and partly not serviceable, in respect of the late Rebellions) was thereby destitute of means to enter into War. The Ambassadors saw this well, but wisely thought fit to advertise the King thereof, rather than to return themselves, till the King's further pleasure were known: The rather, for that Maximilian himself spake as great, as ever he did before, and entertained them with dilatory Answers; so as the formal part of their Ambassage might well warrant and require their further stay. The King hereupon (who doubted as much before, and saw through his business from the beginning) wrote back to the Ambassadors, commending their discretion in not returning, and willing them to keep the state wherein they found Maximilian, as a Secret, till they heard further from him; And mean while went on with his Voyage Royal for France, suppressing for a time this Advertisement touching Maximilian's poverty and disability.

By this time, was drawn together a great and puissant Army into the City of London; in which were Thomas Marquess Dorset, Thomas Earl of Arundel, Thomas Earl of Derby, George Earl of Shrewsbury, Edmond Earl of Suffolk, Edward Earl of Devonshire, George Earl of Kent, the Earl of Essex, Thomas Earl of Ormond, with a great number of Barons, Knights, and principal Gentlemen; and amongst them, Richard Thomas, much noted for the brave Troops that he brought out of Wales; the Army rising in the whole to the number of five and twenty thousand Foot, and sixteen hundred Horse. Over which, the King (constant in his accustomed trust and employment) made Jasper Duke of Bedford, and John Earl of Oxford Generals under his own person. The ninth of September, in the eighth year of his Reign, he departed from Greenwich; towards the Sea, all men wondering, that he took that season (being so near Winter) to begin the War; and some thereupon gathering it was a sign that the

War would not be long. Nevertheless, the King gave out the contrary, thus: That he intending not to make a Summer-business of it, but a resolute War (without term prefixed) until he recovered France; it skilled not much when he began it: especially having Calice at his back; where he might winter, if the reason of the War so required. The sixth of October, he embarqued at Sandwich; and the same day took land at Calice: which was the Rendezvonz, where all his Forces were assigned to meet. But in this his Journey towards the Sea-side (wherein, for the cause that we shall now speak of, he hovered so much the longer) he had received Letters from the Lord Cordes: who the hotter he was against the English in time of War, had the more credit in a Negotiation of Peace; and besides was held a man open, and of good faith. In which Letters there was made an overture of Peace from the French King, with such Conditions, as were somewhat to the King's tast: but this was carried at the first with wonderful secrecy. The King was no sooner come to Calice, but the calm winds of Peace began to blow. For first, the English Ambassadors returned out of Flanders from Maximilian; and certified the King, that he was not to hope for any ayd from Maximilian, for that he was altogether improvided. His will was good; but he lacked money. And this was made known; and spread through the Army. And although the English were therewithal nothing dismayed; and that it be the manner of Soldiers, upon bad news to speak the more bravely: yet nevertheless it was a kind of preparative to a Peace. Instantly in the neck of this (as the King had laid it) came news that Ferdinando and Isabella, Kings of Spain, had concluded a peace with King Charles; and that Charles had restored unto them the Counties of Russignon and Perpignian, which formerly were Mortgaged by John King of Arragon (Ferdinando's Father) unto France, for three hundred thousand Crowns; which debt was also, upon this Peace, by Charles clearly released. This came also handsomly to put on the Peace: both because so potent a Confederate was faln off, and because it was a fair example of a Peace bought; so as the King should not be the sole Merchant in this Peace. Upon these Airs of Peace, the King was content, that the Bishop of Exceter, and the Lord Daubigny (Governour of Calice) should give a meeting unto the Lord Cordes, for the

Treaty of a Peace. But himself nevertheless, and his Army, the fifteenth of October, removed from Calice, and in four days march sate him down before Bulloign.

During this Siege of Bulloign (which continued near a Month) there passed no memorable Action, nor Accident of War: only Sir John Savage, a valiant Captain, was slain, riding about the Walls of the Town, to take a View. The Town was both well fortified, and well manned; yet it was distressed, and ready for an Assault: which if it had been given (as was thought) would have cost much blood; but yet the Town would have been carried in the end. Mean while, a Peace was concluded by the Commissioners, to continue for both the Kings Lives. Where there was no Article of importance; being in effect, rather a Bargain, than a Treaty. For, all things remained as they were: save that there should be paid to the King seven hundred forty five thousand Ducats in present, for his Charges in that Journey; and five and twenty thousand Crowns yearly, for his Charges sustained in the Ayds of the Britons. For which Annual, though he had Maximilian bound before for those Charges; yet he counted the alteration of the Hand, as much as the principal Debt. And besides, it was left somewhat indefinitely; when it should determine or expire; which made the English esteem it as a Tribute, carried under fair Terms. And the truth is, it was paid both to the King, and to his Son King Henry the Eighth, longer than it could continue upon any computation of Charges. There were also assigned by the French King, unto all the King's principal Counsellors, great Pensions, besides rich Gifts for the present. Which whether the King did permit, to save his own Purse from Rewards, or to communicate the Envy of a Business, that was displeasing to his People, was diversly interpreted; for certainly, the King had no great fancy to own this Peace. And therefore, a little before it was concluded, he had under-hand procured some of his best Captains, and Men of War, to advise him to a Peace under their hands, in an earnest manner, in the nature of a Supplication. But, the truth is, this Peace was welcom to both Kings. To Charles, for that it assured unto him the possession of Britain, and freed the enterprise of Naples. To Henry, for that it filled his Coffers; and that he foresaw at that time a storm of

inward troubles coming upon him; which presently after brake forth. But it gave no less discontent to the Nobility, and principal persons of the Army; who had many of them sold or engaged their Estates, upon the hopes of the War. They stuck not to say, That the King cared not to plume his Nobility and People, to feather himself. And some made themselves merry with that the King had said in Parliament: That after the War was once begun, he doubted not but to make it pay it self; saying he had kept promise.

Having risen from Bulloign, he went to Calice, where he stayed some time. From whence also he wrote Letters, (which was a Courtesie that he sometimes used) to the Mayor of London, and Aldermen his Brethren; half bragging, what great summs he had obtained for the Peace; knowing well, that full Coffers of the King, is ever good news to London. And better news it would have been, if their Benevolence had been but a Loan. And upon the seventeenth of December following, he returned to Westminster, where he kept his Christmas.

Soon after the King's return, he sent the Order of the Garter, to Alphonso Duke of Calabria, eldest Son to Ferdinando King of Naples; an honour sought by that Prince, to hold him up in the eyes of the Italians: who, expecting the Arms of Charles, made great account of the Amity of England, for a Bridle to France. It was received by Alphonso, with all Ceremony and Pomp that could be devised; as things use to be carried that are intended for Opinion. It was sent by Urswick: upon whom the King bestowed this Ambassage, to help him, after many dry Employments.

AT this time the King began again to be haunted with Spirits, by the Magick and curious Arts of the Lady Margaret: who raised up the Ghost of Richard Duke of York, second Son to King Edward the Fourth, to walk and vex the King. This was a finer Counterfeit Stone, than Lambert Simnel, better done, and worn upon greater hands; being graced after, with the wearing of a King of France, and a King of Scotland, not of a Duchess of Burgundy only. And for Simnel, there was not much in him, more than that he was a handsom Boy, and did not shame his Robes. But this Youth (of whom we are now to speak) was such a Mercurial, as the like hath seldom been known, and could make his own Part, if

at any time he chanced to be out. Wherefore, this being one of the strangest Examples of a Personation, that ever was in Elder or Latter times; it deserveth to be discovered, and related at the full: Although the King's manner of shewing things, by Pieces and by Dark Lights, hath so musfled it, that it hath left it almost as a Mystery to this day.

The Lady Margaret (whom the King's Friends called Juno, because she was to him as Junb was to Aeneas, stirring both Heaven and Hell, to do him mischief) for a foundation of her particular Practices against him, did continually, by all means possible, nourish, maintain, and divulge the flying Opinion, That Richard Duke of York (second Son to Edward the Fourth) was not murthered in the Tower, (as was given out) but saved alive; For that those, who were employed in that barbarous Fact, having destroyed the elder Brother, were stricken with remorse and compassion towards the younger, and set him privily at liberty, to seek his Fortune. This Lure she cast abroad, thinking that this Fame and Belief (together with the fresh Example of Lambert Simnel) would draw at one time, or other, some Birds to strike upon it. She used likewise a further diligence, not committing all to Chance. For, she had some secret Espials (like to the Turks Commissioners for Children of Tribute) to look abroad for handsom and graceful Youths to make Plantagenets, and Dukes of York. At the last she did light on one, in whom all things met, as one would wish to serve her turn, for a Counterfeit of Richard Duke of York.

This was Perkin Warbeck, whose Adventures we shall now describe. For, first, the years agreed well. Secondly, he was a Youth of fine favour and shape. But more than that, he had such a crafty and bewitching fashion, both to move Pity, and to induce Belief, as was like a kind of Fascination, and Inchantment to those that saw him, or heard him. Thirdly, he had been from his Childhood such a Wanderer, or (as the King called him) such a Land-loper, as it was extreme hard to hunt out his Nest and Parents. Neither again could any man, by company or conversing with him, be able to say or detect well what he was; he did so flit from place to place. Lastly, there was a Circumstance (which is mentioned by one that wrote in the same time) that is very likely to have made somewhat to the

matter; which is, That King Edward the Fourth was his Godfather. Which, as it is somewhat suspicious, for a wanton Prince to become Gossip in so mean a House; and might make a man think, that he might indeed have in him some base Blood of the House of York: so at the least (though that were not) it might give the occasion to the Boy, in being called King Edward's God-son, or perhaps in sport, King Edward's Son, to entertain such Thoughts into his Head. For, Tutor he had none, (for ought that appears) as Lambert Simnel had, until he came unto the Lady Margaret, who instructed him.

Thus therefore it came to pass: There was a Towns-man of Tourney, that had born Office in that Town, whose name was John Osbeck, a Convert-Jew, married to Catherine de Faro; whose business drew him, to live for a time with his Wife at London, in King Edward the Fourth's days. During which time he had a Son by her: and being known in Court, the King either out of a religious Nobleness, because he was a Convert, or upon some private acquaintance, did him the Honor, as to be Godfather to his Child, and named him Peter. But, afterwards, proving a dainty and effeminate Youth, he was commonly called by the diminutive of his name; Peterkin, or Perkin. For, as for the name of Warbeck, it was given him when they did but guess at it, before examinations had been taken. But yet he had been so much talked on by that name, as it stuck by him after his true name of Osbeck was known. While he was a young Child his Parents returned with him to Tourney. Then was he placed in a house of a kinsman of his, called John Stenbeck, at Antwerp: and so roved up and down between Antwerp and Tourney, and other Towns of Flanders, for a good time; living much in English Company, and having the English Tongue perfect. In which time, being grown a comely Youth, he was brought by some of the Espials of the Lady Margaret unto her Presence. Who viewing him well, and seeing that he had a Face and Personage that would bear a Noble fortune, and finding him otherwise of a fine Spirit, and winning Behaviour; thought she had now found a curious Piece of Marble, to carve out an Image of a Duke of York. She kept him by her a great while, but with extreme secrecy. The while, she instructed him, by many Cabinet-Conferences. First, in Princely behaviour and

gesture; teaching him how he should keep State, and yet with a modest sense of his misfortunes. Then she informed him of all the circumstances and particulars, that concerned the Person of Richard Duke of York, which he was to act: Describing unto him the Personages, Lineaments, and Features of the King and Queen, his pretended Parents; and of his Brother and Sisters, and divers others, that were nearest him in his Childhood; together with all passages, some secret, some common, that were fit for a Child's memory, until the death of King Edward. Then she added the particulars of the time, from the King's death, until he and his Brother were committed to the Tower, as well during the time he was abroad, as while he was in Sanctuary. As for the times while he was in the Tower, and the manner of his Brother's death; and his own escape; she knew they were things that a very few could controle. And therefore she taught him, only to tell a smooth and likely Tale of those matters; warning him not to vary from it. It was agreed likewise between them, what account he should give of his Peregrination abroad; intermixing many things which were true, and such as they knew others could testifie, for the credit of the rest: but, still making them to hang together, with the Part he was to play. She taught him likewise how to avoid sundry captious and tempting questions which were like to be asked of him. But, in this she found him of himself so nimble and shifting, as she trusted much to his own wit and readiness; and therefore laboured the less in it. Lastly, she raised his thoughts with some present rewards, and further promises; setting before him chiefly the glory, and fortune of a Crown, if things went well; and a sure refuge to her Court, if the worst should fall. After such time as she thought he was perfect in his Lesson, she began to cast with her self from what coast this Blazing star should first appear, and at what time it must be upon the Horizon of Ireland; for there had the like Meteor strong influence before: the time of the Apparition to be, when the King should be engaged into a War with France. But well she knew, that whatsoever should come from her, would be held suspected. And therefore; if he should go out of Flanders immediately into Ireland, she might be thought to have some hand in it. And besides, the time was not yet ripe; for that the two Kings were upon terms of Peace. Therefore she wheel'd about;

and to put all suspition a far off, and loth to keep him any longer by her, (for that she knew Secrets are not long-lived) she sent him unknown into Portugal, with the Lady , an English Lady, for Portugal at that time; with some Privado of her own, to have an eye upon him: and there he was to remain and to expect her further directions. In the mean time, she omitted not to prepare things for his better welcome, and accepting, not only in the Kingdom of Ireland, but in the Court of France. He continued in Portugal about a year; and, by that time, the King of England called his Parliament (as hath been said) and declared open War against France. Now did the Sign , and the was come, under Perkin should appear. And therefore he was straight sent unto by the Duchess, to go for Ireland, according to the first designment. In Ireland he did arrive at the Town of Cork. When he was thither come, his own Tale was, (when he made his Confession afterwards) That the Irish-men, finding him in some good clothes, came flocking about him, and bare him down, that he was the Duke of Clarence, that had been there before; and after, that he was Richard the Third's base Son; and lastly, that he was Richard Duke of York, second Son to Edward the Fourth: But that he (for his part) renounced all these things, and offered to swear upon the Holy Evangelists, that he was no such man; till, at last, they forced it upon him, and bad him fear nothing, and so forth. But the truth is, that immediately upon his coming into Ireland, he took upon him the said Person of the Duke of York., and drew unto him Complices, and Partakers, by all the means he could devise: Insomuch, as he wrote his Letters unto the Earl of Densmond and Kildare, to come in to his Ayd, and be of his Party: the Originals of which Letters are yet extant.

Somewhat before this time, the Duchess had also gained unto her a near Servant of King Henry's own, one Stephen Frion, his Secretary for the French Tongue; an active man, but turbulent, and discontented. This Frion had fled over to Charles the French King, and put himself into his service, at such time as he began to be in open enmity with the King. Now King Charles, when he understood of the Person and Attempts of Perkin (ready of himself to embrace all advantages against the King of England; instigated by Frion, and formerly

prepared by the Lady Margaret,) forthwith dispatched one Lucas, and this Frion, in the nature of of Ambassadors to Perkin, to advertise him of the King's good inclination to him, and that he was resolved to ayd him, to recover his right against King Henry, an Usurper of England, and an Enemy of France; and wished him, to come over unto him at Paris. Perkin thought himself in heaven now, that he was invited by so great a King, in so honourable a manner; And imparting unto his Friends in Ireland for their encouragement; how Fortune called him, and what great hopes he had, sailed presently into France. When he was come to the Court of France, the King received him with great honour; saluted, and stiled him by the name of the Duke of York; lodged him, and accommodated him in great State: And the better to give him the representation and the countenance of a Prince, assigned him a Guard for his Person, whereof the Lord Congreshall was Captain. The Courtiers likewise (though it be ill mocking with the French) applied themselves to their King's bent, seeing there was reason of State for it. At the same time there repaired unto Perkin divers Englishmen of Quality; Sir George Nevile, Sir John Taylor, and about one hundred more: and amongst the rest, this Stephen Frion, of whom we spake; who followed his fortune both then and for a long time after, and was indeed his principal Counsellor and Instrument in all his Proceedings. But all this, on the French King's part, was but a Trick, the better to bow King Henry to Peace. And therefore upon the first Grain of Incense, that was sacrificed upon the Altar of Peace, at Bulloign, Perkin was smoaked away. Yet would not the French King deliver him up to King Henry (as he was laboured to do) for his Honors sake, but warned him away, and dismissed him. And Perkin on his part, was as ready to be gone, doubting he might be caught up under-hand. He therefore took his way into Flanders, unto the Duchess of Burgundy; pretending, that having been variously tossed by Fortune, he directed his course thither, as to a safe Harbour: No ways taking knowledge, that he had ever been there before, but as if that had been his first address. The Duchess; on the other part, made it as new and strange to see him: pretending (at the first) that she was taught and made wise by the example of Lambert Simnel, how she did admit of any Counterfeit stuff;

though even in that (she said) she was not fully satisfied. She pretended at the first (and that was ever in the presence of others) to pose him and sift him, thereby to try whether he were indeed the very Duke of York, or no. But, seeming to receive full satisfaction by his answers, she then feined her self to be transported with a kind of astonishment, mixt of Joy and Wonder, at his miraculous deliverance; receiving him, as he were risen from death to life; and inferring, that God, who had in such wonderful manner preserved him from Death, did likewise reserve him for some great and prosperous Fortune. As for his dismission out of France, they interpreted it not, as if he were detected or neglected for a Counterfeit Deceiver; but contrariwise, that it did shew manifestly unto the World, that he was some Great matter; for that it was his abandoning, that (in effect) made the Peare: being no more but the sacrificing of a poor distressed Prince unto the utility and Ambition of two Mighty Monarchs. Neither was Perkin for his part wanting to himself, either in gracious and Princely behaviour, or in ready and apposite answers, or in contenting and caressing those that did apply themselves unto him or in pretty scorn and disdain to those that seemed to doubt of him; but in all things did notably acquit himself: Insomuch as it was generally believed (as well amongst great Persons, as amongst the Vulgar) that he was indeed Duke Richard. Nay, himself, with long and continual counterfeiting, and with oft telling a Lye, was turned by habit almost into the thing he seemed to be, and from a Lyar, to a Believer. The Duchess therefore (as in a case out of doubt) did him all Princely honour, calling him always by the name of her Nephew, and giving him the Delicare Title of the White-Rose of England; and appointed him a Guard of thirty persons, Halberdiers, clad in a party-coloured Livery of Murrey and Blew, to attend his Person. Her Court likewise, and generally the Dutch and Strangers in their usage towards him, expressed no less respect.

The News hereof came blazing and thundering over into England; that the Duke of York was sure alive. As for the name of Perkin Warbeck, it was not at that time come to light, but all the news ran upon the Duke of York; that he had been entertained in Ireland, bought and sold in France, and was now plainly

avowed, and in great honour in Flanders. These Fames took hold of divers; in some upon discontent, in some upon ambition, in some upon levity and desire of change, and in some few upon conscience and belief, but in most upon simplicity; and in divers out of dependance upon some of the better sort, who did in secret favour and nourish these bruits. And it was not long, ere these rumors of Novelty, had begotten others of Scandal and Murmur against the King, and his government; taxing him for a great Taxer of his People, and discountenancer of his Nobility. The loss of Britain, and the Peace with France were not forgotten. But chiefly they fell upon the wrong that he did his Queen, in that he did not reign in her Right. Wherefore they said, that God had now brought to light a Masculine-Branch of the House of York, that would not be at his Courtesie, howsoever he did depress his poor Lady. And yet (as it fareth in things which are currant with the Multitude, and which they affect) these Fames grew so general, as the Authors were lost in the generality of Speakers. They being like running Weeds, that have no certain root; or like Footings up and down, impossible to be traced. But after a while, these ill Hamors drew to an head, and setled secretly in some eminent Persons; which were Sir William Stanley Lord Chamberlain of the King's Houshold, the Lord Fitz-water, Sir Simon Mountfort, Sir Thomas Thwaites. These entred into a secret Conspiracy to favour Duke Richard's Title. Nevertheless none engaged their fortunes in this business openly, but two; Sir Robert Clifford, and Master William Barley, who sailed over into Flanders, sent indeed from the Party of the Conspirators here, to understand the truth of those things that passed there, and not without some help of monies from hence; Provisionally to be delivered, if they found and were satisfied, that there was truth in these pretences. The person of Sir Robert Clifford (being a Gentleman of Fame and Family) was extremely welcome to the Lady Margaret. Who after she had confeernce with him, brought him to the sight of Perkin, with whom he had often speech and discourse. So that in the end won either by the Duchess, to affect, or by Perkin to believe, he wrote back into England, that he knew the Person of Richard Duke of York, as well as he knew his own; and that this Young-man was undoubtedly he. By this means all things

grew prepared to Revolt and Section here, and the Conspiracy came to have a Correspondence between Planders and England.

The King on his part was not asleep; but to Arm or levy Forces yet, he thought would but shew fear, and do this Idol too much worship. Nevertheless the Ports he did shut up, or at least kept a Watch on them, that none should pass to or fro that was suspected. But for the rest, he chose to work by Counter-mine. His purposes were two; the one, to lay open the Abuse: the other, to break the knot of the Conspirators. To detect the Abuse, there were but two ways; the first, to make it manifest to the world, that the Duke of York was indeed murthered: the other, to prove, that were he dead or alive, yet Perkin was a Counterfeit. For the first, thus it stood. There were but four persons that could speak upon knowledge, to the murther of the Duke of York; Sir James Tirrel, (the employed-man from King Richard) John Dighton, and Miles Forrest, his Servants, (the two Butchers or Tormentors) and the Priest of the Tower, that buried them. Of which four, Miles Forrest, and the Priest were dead, and there remained alive only Sir James Tirrel, and John Dighton. These two the King caused to be committed to the Tower, and examined touching the manner of the Death of the two Innocent Princes. They agreed both in a Tale, (as the King gave out) to this effect: That King Richard having directed his Warrant for the putting of them to death, to Brackenbury the Lieutenant of the Tower, was by him refused. Whereupon the King directed his Warrant to Sir James Tirrel, to receive the Keys of the Tower from the Lieutenant (for the space of a night) for the King's special service. That Sir James Tirrel accordingly repaired to the Tower by night, attended by his two Servants afore-named, whom he had chosen for that purpose. That himself stood at the stair-foot, and sent these two Villains to execute the murther. That they smothered them in their bed; and that done, called up their Master to see their naked dead bodies, which they had laid forth. That they were buried under the Stairs, and some stones cast upon them. That when the report was made to King Richard, that his will was done, he gave Sir James Tirrel great thanks, but took exception to the place of their burial, being too base for them that were King's

children. Where upon another night by the King's Warrant renewed, their bodies were removed by the Priest of the Tower, and buried by him in some place, which (by means of the Priest's death soon after) could not be known. Thus much was then delivered abroad, to be the effect of those Examinations. But the King nevertheless made no use of them in any of his Declarations; whereby (as it seems) those Examinations left the business somewhat perplexed. And as for Sir James Tirrel, he was soon after beheaded in the Tower-yard, for other matters of Treason. But John-Dighton (who it seemeth spake best for the King) was forthwith set at liberty, and was the principal means of divulging this Tradition. Therefore this kind of proof being left so naked, the King used the more diligence in the latter, for the tracing of Perkin. To this purpose, he sent abroad into several parts, and especially into Flanders, divers secret and nimble Scouts and Spies; some feigning themselves to flie over unto Perkin, and to adhere unto him; and some under other pretences, to learn, search, and discover all the circumstances and particulars of Perkin's Parents, Birth, Person, Travels up and down; and in brief, to have a Journal (as it were) of his life and doings. He furnished these his employed-men liberally with Money, to draw on and reward intelligences: giving them also in charge, to advertise continually what they found, and nevertheless still to go on. And ever as one Advertisement and Discovery called up another, he employed other new Men, where the Business did require it. Others he employed in a more special nature and trust, to be his Pioners in the main Counter-mine. These were directed to insinuate themselves into the familiarity and confidence of the principal persons of the Party in Flanders, and so to learn what Associates they had, and Correspondents, either here in England, or abroad; and how far every one engaged, and what new ones they meant afterwards to try, or board. And as this for the Persons; so for the Actions themselves, to discover to the Bottom (as they could) the utmost of Perkin's and the Conspirators their Intentions, Hopes, and Practices. These latter Best-be-trust-Spies had some of them further instructions, to practise and draw off the best Friends and Servants of Perkin, by making remonstrance to them, how weakly his Enterprize and Hopes were built, and with how prudent and

potent a King they had to deal; and to reconcile them to the King, with promise of Pardon, and good Conditions of Reward, And (above the rest) to assail, sap, and work into the constancy of Sir Robert Clifford; and to win him, (if they could) being the man that knew most of their secrets, and who being won away, would most appall and discourage the rest, and in a manner break the Knot.

There is a strange Tradition; That the King being lost in a Wood of Suspitions, and not knowing whom to trust, had both intelligence with the Confessors and Chaplains of divers great men, and for the better Credit of his Espials abroad with the contrary side, did use to have them cursed at St. Pauls (by Name) amongst the Bead-Roll of the King's Enemies, according to the Custom of those Times. These Espials plyed their Charge so roundly; as the King had an Anatomy of Perkin alive; and was likewise well informed of the particular correspondent Conspirators in England, and and many other Mysteries were revealed; and Sir Robert Clifford in especial won to be assured to the King, and industrious and officious for his service. The King therefore (receiving a rich Return of his diligence, and great satisfaction touching a number of Particulars) first divulged and spred abroad the Imposture and jugling of Perkin's Person and Travels, with the Circumstances thereof, throughout the Realm. Not by Proclamation (because things were yet in Examination, and so might receive the more or the less) but by Court-fames, which commonly print better than printed Proclamations. Then thought he it also time to send an Ambassage unto Archduke Philip, into Flanders, for the abandoning and dismissing of Perkin. Herein he employed Sir Edward Poynings, and Sir William Warham, Doctor of the Canon Law. The Archduke was then young, and governed by his Council: before whom the Embassadors had audience, and Doctor Warham spake in this manner:

MY Lords, the King our Master is very sorry, that England and your Countrey here of Flanders having been counted as Man and Wife for so long time, now this Countrey of all others should be the Stage, where a base Counterfeit should play the part of a King of England; not only to his Graces disquiet and dishonour, but to the scorn and reproach of all Sovereign Princes.

To counterfeit the dead Image of a King in his Coyn, is an high Offence by all Laws: But to counterfeit the living Image of a King in his Person, exceedeth all Falsifications, except it should be that of a Mahomet, or an Antichrist, that counterfeit Divine Honour. The King hath too great an Opinion of this sage Council, to think that any of you is caught with this Fable, (though way may be given by you to the passion of some): the thing in it self is so improbable. To set Testimonies aside of the Death of Duke Richard, which the King hath upon Record, plain and infallible because they may be thought to be in the King's own Power) let the thing testifie for it self. Sense and Reason no Power can command. Is it possible (trow you) that King Richard should damn his Soul, and foul his Name with so a Murther, and yet not mend his Case? Or do you think, that Men of Blood (that were his Instruments) did turn to Pity in the middest of their Execution? Whereas in cruel and savage Beasts, and Men also, the first Draught of Blood doth yet make them more fierce, and enraged. Do you not know, that the Bloody Executioners of Tyrants do go to such Errants, with an Halter about their neck: So that if they perform not, they are sure to die for it? And do you think, that these men would hazard their own lives, for sparing anothers? Admit they should have saved him: What should they have done with him? Turn him into London-Streets, that the Watch-men or any Passenger that should light upon him, might carry him before a Justice, and so all come to light? Or should they have kept him by them secretly? That surely would have required a great deal of Care, Charge, and continual Fears. But (my Lords) I labour too much in a clear Business. The King is so wise, and hath so good Friends abroad, as now he knoweth Duke Perkin from his Cradle. And because he is a great Prince, if you have any good Poet here, he can help him with Notes to write his Life; and to parallel him with Lambert Simnel, now the King's Falconer. And therefore (to speak plainly to your Lordships) it is the strangest thing in the World, that the Lady Margaret (excuse us, if we name her, whose Malice to the King is both causlless and endless) should now when she is old, at the time when other Women give over Child-bearing, bring forth two such Monsters; being not the Births of nine or ten Months, but of many Years. And

whereas other natural Mothers bring forth Children weak, and not able to help themselves; she bringeth forth tall Striplings, able soon after their coming into the World, to bid Battel to mighty Kings. My Lords, we stay unwillingly upon this Part. We would to God, that Lady would once tast the Joys, which God Almighty doth serve up unto her, in beholding her Niece to Reign in such Honour, and with so much Royal Issue, which she might be pleased to accompt as her own. The Kings Request unto the Archduke, and your Lordships, might be; That, according to the example of King Charles, who hath already discarded him, you would banish this unworthy Fellow out of your Dominions. But because the King may justly expect more from an ancient Confederate, than from a new reconciled Enemy; he maketh his Request unto you, to deliver him up into his hands. Pirates and Impostures of this sort, being fit to be accounted the Common Enemies of Mankind, and no ways to be protected by the Law of Nations.

After some time of deliberation, the Ambassadors received this short Answer:

THat the Archduke, for the love of King Henry, would in no sort ayd or assist the pretended Duke, but in all things conserve the Amity he had with the King. But for the Duchess Dowager, she was absolute in the Lands of her Dowry, and that he could not let her to dispose of her own.

THE King, upon the return of the Ambassadors, was nothing satisfied with this Answer. For well he knew, that a Patrimonial Dowry carried no part of Sovereignty, or Command of Forces. Besides, the Ambassadors told him plainly, that they saw the Duchess had a great Party in the Archduke's Council; and that howsoever it was carried in a course of connivence, yet the Archduke under-hand gave ayd and furtherance to Perkin. Wherefore (partly out of Courage, and partly out of Policy) the King forthwith banished all Flemings (as well their Persons, as their Wares) out of his Kingdom; commanding his Subjects likewise (and by name his Merchants-Adventurers) which had a Resiance in Antwerp, to return; translating the Mart (which commonly followed the English Cloth) unto Calice, and embarred also all further Trade for the future. This the King did, being sensible in point of honour, not to suffer a Pretender to the Crown of

England, to affront him so near at hand, and he to keep terms of Friendship with the Countrey where did set up. But he had also a further reach: for that he knew well, that the Subjects of Flanders drew so great commodity from the Trade of England, as by this Embargo they would soon wax weary of Perkin, and that the Tumults of Flanders had been so late and fresh, as it was no time for the Prince to displease the People. Nevertheless for forms sake, by way of requital, the Archduke did likewise banish the English out of Flanders; which in effect was done to his hand.

The King being well advertised, that Perkin did more trust upon Friends and Partakers within the Realm, than upon forein Arms, thought it behoved him to apply the Remedy, where the Disease lay; and to proceed with severity against some of the principal Conspirators here within the Realm; Thereby to purge the ill humours in England, and to cool the hopes in Flanders. Wherefore he caused to be apprehended (almost at an instant) John Ratcliff Lord Fitz-water, Sir Simon Mountford, Sir Thomas Thwaites, William Daubigney, Robert Ratcliff, Thomas Chressenor, and Thomas Astwood. All these were arraigned, convicted and condemned for High-Treason, in adhering, and promising ayd to Perkin. Of these, the Lord Fitz-water was conveyed to Calice, and there kept in hold, and in hope of life, until soon after (either impatient, or betrayed) he dealt with his Keeper to have escaped, and thereupon was beheaded. But Sir Simon Mountford, Robert Ratcliff, and William Daubigney were beheaded immediately after their Condemnation. The rest were pardoned, together with many others, Clerks and Laicks; amongst which were two Dominican Friers, and William Worseley, Dean of St. Pauls: which latter sort passed Examination, but came not to publick Tryal.

The Lord Chamberlain at that time was not touched; whether it were, that the King would not stir too many humours at once, but (after the manner of good Physicians) purge the Head last; or that Clifford (from whom most of these Discoveries came) reserved that Piece for his own coming over: signifying only to the King in the mean time, that he doubted there were some greater ones in

the business, whereof he would give the King further account, when he came to his presence.

Upon All-hallows-day-even, being now the tenth year of the King's Reign, the King's second Son Henry was created Duke of York; and as well the Duke, as divers others, Noblemen, KnightsBatchelors, and Gentlemen of quality were made Knights of the Bath, according to the Ceremony. Upon the morrow after Twelfthday, the King removed from Westminster (where he had kept his Christmas) to the Tower of London. This he did as soon as he had advertisement, that Sir Robert Clifford (in whose Bosom or Budget most of Perkin's secrets were laid up) was come into England. And the place of the Tower was chosen to that end, that if Clifford should accuse any of the Great-ones, they might without suspition, or noise, or sending abroad of Warrants, be presently attached; the Court and Prison being within the cincture of one Wall. After a day or two, the King drew unto him a selected Council, and admitted Clifford to his presence; who first fell down at his feet, and in all humble manner craved the King's Pardon, which the King then granted, though he were indeed secretly assured of his life before. Then commanded to tell his knowledge, he did amongst many others (of himself, not interrogated) appeach Sir William Stanley, the Lord Chamberlain of the King's Houshold.

The King seemed to be much amazed at the naming of this Lord, as if he had heard the news of some strange and fearful Prodigy. To hear a man that had done him service of so high a nature, as to save his Life, and set the Crown upon his head; a man, that enjoyed by his favour and advancement, so great a fortune, both in Honour and Riches; a man, that was tyed unto him in so near a band of Alliance, his Brother having married the King's Mother; and lastly, a man to whom he had committed the trust of his Person, in making him his Chamberlain. That this Man, no ways disgraced, no ways discontent, no ways put in fear, should be false unto him. Clifford was required to say over again, and again, the Particulars of his Accusation; being warned, that in a matter so unlikely, and that concerned so great a Servant of the King's, he should not in any wise go too far. But the King finding that he did sadly, and constantly (without hesitation or

varying, and with those civil Protestations that were fit) stand to that that he had said, offering to justifie it upon his soul and life; he caused him to be removed. And after he had not a little bemoaned himself unto his Council there present, gave order that Sir William Stanley should be restrained in his own Chamber, where he lay before, in the Square Tower. And the next day he was examined by the Lords. Upon his Examination, he denyed little of that wherewith he was charged, nor endeavoured much to excuse or extenuate his fault. So that (not very wisely) thinking to make his Offence less by Confession, he made it enough for Condemnation. It was conceived, that he trusted much to his former Merits, and the interest that his Brother had in the King. But those helps were over-weighed by divers things that made against him, and were predominant in the King's nature and mind. First, an Over-merit; for convenient Merit, unto which reward may easily reach, doth best with Kings. Next the sense of his Power; for the King thought, that he that could set him up, was the more dangerous to pull him down. Thirdly, the glimmering of a Confiscation; for he was the richest Subject for value in the Kingdom: there being found in his Castle of Holt forty thousand Marks in ready Money, and Plate, besides Jewels, Houshold-stuff, Stocks upon his grounds, and other Personal Estate, exceeding great. And for his Revenue in Land and Fee, it was three thousand Pounds a year of old-Rent, a great matter in those times. Lastly, the Nature of the Time; for if the King had been out of fear of his own Estate, it was not unlike he would have spared his life. But the Cloud of so great a Rebellion hanging over his head, made him work sure. Wherefore after some six Weeks distance of time, which the King did honorably interpose, both to give space to his Brother's Intercession, and to shew to the world, that he had a conflict with himself what he should do; he was arraigned of High-Treason, and condemned, and presently after beheaded.

Yet it is to this day left but in dark memory, both what the Case of this Noble Person was, for which he suffered; and what likewise was the ground and cause of his defection, and the alienation of his heart from the King. His Case was said to be this: That in discourse between Sir Robert Clifford and him, he had said, That if he were sure, that that young man were King Edward's Son, he would

never bear Arms against him. This Case seems somewhat an hard Case, both in respect of the Conditional, and in respect of the other words. But for the Conditional, it seems the Judges of that time (who were Learned men, and the three chief of them of the Privy Council) thought it was a dangerous thing to admit Ifs and Ands, to qualifie words of Treason; whereby every man might express his malice, and blanch his danger. And it was like to the Case (in the following times) of Elizabeth-Barton, the holy Maid of Kent; who had said, That if King Henry the Eighth did not take Catherine his Wife again, he should be deprived of his Crown, and dye the death of a Dog. And infinite Cases may be put of like nature. Which (it seemeth) the grave Judges taking into Consideration, would not admit of Treasons upon Condition. And as for the Positive words, That he would not bear Arms against King Edward's Son, though the words seem calm, yet it was a plain and direct Overruling of the King's Title, either by Line of Lancaster, or by Act of Parliament. Which (no doubt) pierced the King more, than if Stanley had charged his Lance upon him in the field. For if Stanley would hold that opinion, that a Son of King Edward had still the better right, he being so principal a person of Authority, and favour about the King; it was to teach all England to say as much. And therefore (as those times were) that speech touched the quick. But some Writers do put this out of doubt; for they say, that Stanley did expresly promise to ayd Perkin, and sent him some help of Treasure.

Now for the Motive of his falling off from the King; It is true, that at Bosworth-Field the King was be-set, and in a manner inclosed round about by the Troops of King Richard, and in manifest danger of his life; when this Stanley was sent by his Brother, with three thousand men to his Rescue, which he performed so, that King Richard was slain upon the Place. So as the condition of Mortal men is not capable of a greater benefit, than the King received by the hands of Stanley; being like the benefit of Christ, at once to Saye, and Crown. For which service the King gave him great gifts, made him his Counsellor and Chamberlain; and (some what contrary to his nature) had winked at the great Spoils of Bosworth-Field, which came almost wholly to this man's hands, to his

infinite enriching. Yet nevertheless blown up with the conceit of his Merit, he did not think he had received good Measure from the King, at least not Pressing-down, and Runningover, as he expected. And his ambition was so exorbitant, and unbounded, as he became Sultor to the King for the Earldom of Chester. Which ever being a kind of Appennage to the Principality of Wales and using to go to the King's Son; his Suit did not only end in a Denial, but in a Distaste. The King perceiving thereby, that his Desires were intemperate, and his Cogitations vast, and irregular, and that his former Benefits were but cheap, and lightly regarded by him. Wherefore the King began not to brook him well. And as a little Leaven of new Distaste doth commonly sowre the whole Lump of former Merits, the King's Wit began now to suggest unto his Passion, that Stanley, at Bosworth-Field, though he came time enough to save his life, yet he stayed long enough to endanger it. But yet having no matter against him, he continued him in his Places, until this his Fall.

After him was made Lord Chamberlain, Giles Lord Dawbeny, a man of great sufficiency and valour; the more, because he was gentle and moderate.

There was a common Opinion, That Sir Robert Clifford (who now was become the State-Informer) was from the beginning an Emissary, and Spy of the King's; and that he fled over into Flanders, with his consent and privity. But this is not probable; both because he never recovered that degree of Grace, which he had with the King before his going over: and chiefly, for that the Discovery which he had made touching the Lord Chamberlain (which was his great Service) grew not from any thing he learn'd abroad, for that he knew it well before he went.

These Executions (and especially that of the Lord Chamberlain's, which was the chief strength of the Party, and by means of Sir Robert Clifford, who was the most inward man of Trust amongst them) did extremely quail the Design of Perkin, and his complices, as well through Discouragement, as Distrust. So that they were now (like Sand without Lime) ill bound together; especially as many as were English: who were at a gaze, looking strange, one upon another, not knowing who was faithful to their Side; but thinking, that the King (what with

his Baits, and what with his Nets) would draw them all unto him that were any thing worth. And indeed it came to pass, that divers came away by the Thred, sometimes one, and sometimes another, Barley (that was Joynt-Commissioner with Clifford) did hold out one of the longest, till Perkin was far worn; yet made his Peace at the length. But the Fall of this Great man, being in so high Authority and Favour (as was thought) with the King; and the manner of Carriage of the Business, as if there had been secret Inquisition upon him, for a great time before, and the Cause for which he suffered, which was little more, than for saying in effect, That the Title of York was better than the Title of Lancaster; which was the Case almost of every man (at the least in Opinion;) was matter of great Terrour amongst all the King's Servants and Subjects: Insomuch, as no man almost thought himself secure; and men durst scarce commune or talk one with another: but there was a general Diffidence every where. Which nevertheless made the King rather more Absolute, than more Safe. For, Bleeding Inwards and shut Vapours strangle soonest, and oppress most.

Hereupon presently came forth Swarms and Volies of Libels (which are the Gusts of Liberty of Speech restrained, and the Females of Sedition) containing bitter Invectives, and Slanders against the King, and some of the Council. For the contriving and dispersing whereof (after great Diligence of Inquiry) five mean persons were caught, and executed.

Mean while; the King did not neglect Ireland, being the Soil where the Musbromes and Upstart-Weeds (that spring up in a Night) did chiefly prosper. He sent therefore from hence (for the better setling of his affairs there) Commissioners of both Robes: The Prior of Lanthony, to be his Chancellour in that Kingdom; and Sir Edward Poynings, with a Power of Men, and a Marshal Commission, together with a Civil Power of his Lieutenant, with a Clause, That the Earl of Kildare, then Deputy, should obey him. But, the Wild-Irish (who were the principal Offendors) fled into the Woods and Bogs, after their manner: and those, that knew themselves guilty, in the Pale, fled to them. So that Sir Edward Poynings was enforced to make a Wild-Chase upon the Wild-Irish: Where (in respect of the Mountains and Fastnesses) he did little good. Which

(either out of a suspicious Melancholy upon his bad Success, or the better to save his service from Disgrace) he would needs impute unto the Comfort, that the Rebels should receive under-hand from the Earl of Kildare; every light suspition growing upon the Earl, in respect of the Kildare that was in the Action of Lambert Simnel, and slain at Stoke-field. Wherefore he caused the Earl to be apprehended, and sent into England; where, upon Examination, he cleared himself so well, as he was re-placed in his Government. But, Poynings (the better to make compensation of the Meagerness of his Service in the Wars, by acts of Peace) called a Parliament; where was made that memorable Act, which this day is called Poynings Law, whereby all the Statutes of England were made to be of force in Ireland. For, before they were not: neither are any now in force in Ireland, which were made in England since that time; which was the tenth year of the King.

About this time, began to be discovered in the King that disposition, which, afterward nourished and whet-on by bad Counsellors and Ministers, proved the Blot of his times; which was, the course he took, to crush Treasure out of his Subjects Purses, by Forfeitures upon Penal Laws. At this, men did startle the more at this time, because it appeared plainly to be in the King's Nature, and not out of his Necessity, he being now in Float for Treasure; For that he had newly received the Peace-money from France, the Benevolence-money from his Subjects, and great Casualties upon the Confiscations of the Lord Chamberlain, and divers others. The first noted Case of this kind, was that of Sir William Capel, Alderman of London: Who, upon sundry Penal Laws, was condemned in the summ of seven and twenty hundred Pounds, and compounded with the King for sixteen hundred: And yet after, Empson would have cut another Chop out of him, if the King had not died in the instant.

The Summer following, the King, to comfort his Mother (whom he did always tenderly love and revere) and to make Demonstration to the World, that the proceedings against Sir William Stanley (which was imposed upon him by necessity of State) had not in any degree diminished the affection he bare to

Thomas, his Brother; went in Progress to Latham, to make merry with his Mother, and the Earl; and lay there divers days.

During this Progress, Perkin Warbeck finding, that time and temporizing, which (whilest his practices were covert and wrought well in England) made for him; did now, when they were discovered and defeated, rather make against him, (for that when matters once go down the Hill, they stay not without a new force) resolved to try his adventure in some exploit upon England; hoping still upon the affections of the Common People towards the House of York. Which body of Common People he thought was not to be practised upon, as persons of Quality are; But, that they only practice upon their affections, was, to set up a Standard in the field. The Place where he should make his Attempt, he chose to be the Coast of Kent.

The King by this time was grown to such an height of Reputation for cunning and Policy, that every Accident and Event, that went well, was laid and imputed to his foresight, as if he had set it before: As, in this particular of Perkin's Design upon Kent. For, the world would not believe afterwards, but the King, having secret Intelligence of Perkin's intention for Kent (the better to draw it on) went of purpose into the North, a-faroff, laying an open side unto Perkin, to make him come to the close, and so to trip up his heels, having made sure in Kent beforehand.

But so it was, that Perkin had gathered together a Power of all Nations, neither in number, not in the hardiness and courage of the Persons, contemptible; but, in their nature and fortunes, to be feared as well of Friends as Enemies; being Bankrupts, and many of them Felons, and such as lived by Rapine. These he put to Sea, and arrived upon the Coast of Sandwich and Deal in Kent, about July.

There he cast Anchor; and to prove the affections of the People, sent some of his men to land, making great boast of the Power that was to follow. The Kentish-men (perceiving that Perkin was not followed by any English of name or account, and that his forces consisted but of strangers born, and most of them base People, and Free-booters, fitter to spoil a Coast, than to recover a Kingdom) resorting unto the principal Gentlemen of the Countrey, professed their loyalty to the King, and desired to be directed and commanded for the best of the King's service. The Gentlemen, entring into Consultation, directed some forces in good number, to shew themselves upon the Coast; and some of them to make signs, to entice Perkin's Soldiers to land, as if they would joyn with them: and some others to appear from some other places, and to make semblance as if they fled from them; the better to encourage them to land. But, Perkin (who, by playing the Prince, or else taught by Secretary Frion, had learned thus much, That People under Command, do use to consult, and after to march in order; and Rebels contrariwise run upon an Head together in confusion) considering the delay of time, and observing their orderly, and not tumultuary Arming, doubted the worst. And therefore the wily Youth would not set one foot out of his Ship, till he might see things were sure. Wherefore the King's Forces, perceiving that they could draw on no more than those that were formerly landed, set upon them, and cut them in pieces, ere they could flie back to their Ships. In which Skirmish (besides those that fled, and were slain) there were taken about an hundred and fifty persons. Which, for that the King thought, that to punish a few for example was Gentleman's play, but for Rascal-People, they were to be cut off every man, especially in the beginning of an Enterprize; and likewise for that he saw, that Perkin's Forces would now consist chiefly of such Rabble and scum of desperate people; he therefore hanged them all, for the greater terrour. They were brought to London, all rail'd in Ropes, like a Team of Horses in a Cart; and were executed some of them at London, and Wapping, and the rest at divers places upon the Sea-Coast of Kent, Sussex, and Norfolk, for Sea-marks, or Light-houses, to teach Perkin's People to avoid the Coast. The King, being advertised of the landing of the Rebels, thought to leave his Progress: But, being certified

the next day, that they were partly defeated, and partly fled, he continued his Progress, and sent Sir Richard Guilford into Kent in message. Who, calling the Countrey together, did much commend (from the King) their fidelity, manhood, and well handling of that service; and gave them all thanks, and (in private) promised Reward to some particulars.

Upon the sixteenth of November (this being the Eleventh year of the King) was holden the Serjeants-Feast, at Ely-Place; there being nine Serjeants of that Call. The King, to honour the Feast, was present with his Queen at the Dinner; being a Prince, that was ever ready to grace and countenance the Professors of the Law; having a little of that, That as he governed his Subjects by his Laws, so he governed his Laws by his Lawyers.

This year also the King entred into League with the Italian Potentates, for the defence of Italy, against France. For, King Charles had conquered the Realm of Naples, and lost it again, in a kind of Felicity of a Dream. He passed the whole length of Italy without resistance: so that it was true which Pope Alexander was wont to say; That the French-men came into Italy, with in their hands, to mark up their lodgings, rather than with Swords to fight. He likewise entred and won, in effect, the whole Kingdom of Naples it self, without striking stroke. But, presently thereupon, he did commit and multiply so many Errours, as was too great a task for the best fortune to overcome. He gave no contentment to the Barons of Naples, of the Faction of the Angeovines; but, scattered his rewards according to the mercenary appetites of some about him. He put all Italy upon their Guard, by the seizing and holding of Ostia, and the protecting of the Liberty of Pisa: which made all men suspect that his purposes looked further, than his Title of Naples. He fell too soon at difference with Ludovico Sfortia; who was the man that carried the Keys which brought him in, and shut him out. He neglected to extinguish some reliques of the War. And lastly, in regard of his easie passage through Italy without resistance, he entred into an over-much despising of the Arms of the Italians: whereby he left the Realm of Naples, at his departure, so much the less provided. So that not long after his return; the whole Kingdom revolted to Ferdinando the younger, and the French were quite driven

out. Nevertheless, Charles did make both great threats, and great preparations, to re-enter Italy once again. Wherefore, at the instance of divers of the States of Italy (and especially of Pope Alexander, there was a League concluded, between the said Pope, Maximilian King of Romans, Henry King of England, Ferdinando and Isabella, King and Queen of Spain (for so they are constantly placed in the Original Treaty throughout,) Augustissimo Barbadico, Duke of Venice and Ludovico Sfortia, Duke of Millan, for the common defence of their Estates. Wherein though Ferdinando of Naples was not named as principal; yet, no doubt, the Kingdom of Naples was tacitly included, as a Fee of the Church.

There dyed also this year Cecile, Duchess of York, Mother to King Edward the Fourth, at her Castle of Barkbamstead, being of extreme years; and who had lived to see three Princes of her body crowned, and four murthered. She was buried at Foderingham, by her Husband.

This year also the King called his Parliament: where many Laws were made, of a more private and vulgar nature, than ought to detain the Reader of an History. And it may be justly suspected, by the proceedings following, that as the King did excell in good Common-wealth Laws; so nevertheless he had, in secret, a design to make use of them, as well for collecting of Treasure, as for correcting of Manners; and so, meaning thereby to harrow his People, did accumulate them the rather.

The principal Law, that was made this Parliament, was a Law of a strange nature: rather just, than legal; and more magnanimous than provident. This Law did ordain, That no person, that did assist in Arms, or otherwise, the King for the time being, should after be impeached therefore, or attainted, either by the course of the Law, or by Act of Parliament: But, if any such Act of Attainder did happen to be made, it should be void, and of none effect; For that it was agreeable to reason of Estate, that the Subject should not enquire of the justness of the King's Title, or Quarrel; and it was agreeable to good Conscience, (that whatsoever the fortune of the War were) the Subject should not suffer for his Obedience. The spirit of this Law was wonderful Pious and Noble: being like in matter of War, unto the spirit of David in matter of Plague, who said, If I have

sinned, strike me; but what have these sheep done? Neither wanted this Law parts of prudent and deep fore-sight. For, it did the better take away occasion, for the People to busie themselves, to pry into the King's Title for that howsoever it fell, their safety was already provided for. Besides, it could not but greatly draw unto him, the love and hearts of the People, because he seemed more careful for them, than for himself. But yet nevertheless, it did take off from his Party, that great Tye and Spur of necessity, to fight and go Victors out of the field; considering their lives and fortunes were put in safety, and protected, whether they stood to it, or ran away. But the force and obligation of this Law was in it self Illusory, as to the latter part of it; by a precedent Act of Parliament, to bind or frustrate a future. For a supreme and absolute Power cannot conclude it self, neither can that which is in nature revocable be made fixed: no more than if a man should appoint or declare by his Will, that if he made any Latter Will, it should be void. And for the Case of the Act of Parliament, there is a notable President of it in King Henry the Eighth's time: Who, doubting he might dye in the minority of his Son, procured an Act to pass, That no Statute made during the minority of the King, should bind him or his Successors, except it were confirmed by the King under his great Seal, at his full age. But the first Act that passed in King Edward the Sixth his time, was an Act of Repeal of that former Act; at which time nevertheless the King was Minor. But things that do not bind; may satisfie for the time.

There was also made a shoaring or under-propping Act for the Benevolence; to make the summs which any person had agreed to pay, and nevertheless were not brought in, to be leviable by course of Law. Which Act did not only bring in the Arears, but did indeed countenance the whole business, and was pretended to be made at the desire of those, that had been forward to pay.

This Parliament also was made that good Law, which gave the Attaint upon a false Verdict between Party and Party, which before was a kind of Evangile, irremediable. It extends not to causes Capital, as well because they are for the most part at the King's Suit; as because in them (if they be followed in Course of Indictment) there passeth a double Jury, the Indictors and the Tryers; and so not

Twelve Men, but Four and twenty. But it seemeth that was not the only reason; for this reason holdeth not in the Appeal. But the great reason was, lest it should tend to the discouragement of Jurors in Cases of Life and Death; if they should be subject to Suit and Penalty, where the favour of Life maketh against them. It extendeth not also to any Suit, where the Demand is under the value of forty Pounds; for that in such Cases of petty value, it would not quit the Charge, to go about again.

There was another Law made against a branch of Ingratitude in Women, who having been advanced by their Husbands., or their Husbands Ancestors, should alien, and thereby seek to defeat the Heirs, or those in Remainder, of the Lands, whereunto they had been so advanced. The remedy was, by giving power to the next, to enter for a forfeiture.

There was also enacted that Charitable Law, for the admission of poor Suitors In Forma Pauperis, without Fee to Counsellor, Attorney, or Clerk, whereby poor men became rather able to vex; than unable to sue. There were divers other good Laws made that Parliament, as we said before: but we still observe our manner, in selecting out those, that are not of a Vulgar nature.

The King this while, though he sate in Parliament, as in full Place, and seemed to account of the designs of Perkin (who was now returned into Flanders) but as a May-game; yet having the composition of a wise-King (Stout without, and Apprehensive within) had given order for the watching of Beacons upon the Coasts, and erecting more where they stood too thin; and had a careful eye where this wandering Cloud would break. But Perkin advised to keep his fire (which hitherto burned as it were upon green wood) alive, with continual blowing; Sailed again into Ireland, whence he had formerly departed, rather upon the hopes France, than upon any unreadiness or discouragement he found in that People. But in the space of time between the King’s Diligence and Poynings Commission, had so setled things there, as there was nothing left for Perkin, but the blustring affection of wild and naked people. Wherefore he was advised by his Council, to seek ayd of the King of Scotland; a Prince young, and valorous, and in good terms with his Nobles and People, and ill affected to King

Henry. At this time also both Maximilian and Charles of France began to bear no good will to the King. The one being displeased with the King's Prohibition of Commerce with Flanders; the other holding the King for suspect, in regard of his late entry into League with the Italians. Wherefore besides the open Ayds of the Duchess of Burgandy, which did with Sails and Oars put on and advance Perkin's designs, there wanted not some secret Tides from Maximilian and Charles, which did further his fortunes. In so much as they, both by their secret Letters, and Messages, recommended him to the King of Scotland.

Perkin therefore coming into Scotland upon those hopes, with a well appointed company, was by the King of Scots (being formerly well prepared) honourably welcomed, and soon after his arrival admitted to his Presence, in a solemn manner. For the King received him in State in his Chamber of Presence, accompanied with divers of his Nobles. And Perkin well attended, as well with those that the King had sent before him, as with his own Train, entred the room where the King was, and coming near to the King, and bowing a little to embrace him, he retired some paces back, and with a loud voice (that all that were present might hear him) made his Declaration in this manner:

HIgh and Mighty King, your Grace, and these your Nobles here present, may be pleased benignly to bow your Ears, to hear the Tragedy of a young Man, that by right ought to hold in his hand the Ball of a Kingdom; but by Fortune is made Himself a Ball; tossed from Misery to Misery, and from Place to Place. You see here before you the Spectacle of a Plantagenet, who hath been carried from the Nursery to the Sanctuary; from the Sanctuary, to the direful Prison; from the Prison, to the hand of the cruel Tormentor; and from that hand, to the wide-Wilderness (as I may truly call it) for so the World hath been to me. So that he that is born to a great Kingdom, hath not ground to set his foot upon, more than this where he now standeth, by your Princely Favour. Edward the Fourth, late King of England, (as your Grace cannot but have heard) left two Sons; Edward, and Richard Duke of York, both very young. Edward, the eldest succeeded their Father in the Crown, by the name of King Edward the Fifth. But Richard, Duke of Gloceffer, their unnatural Uncle, first thirsting after the Kingdom, through

Ambition, and afterwards thirsting for their Blood, out of desire to secure himself; employed an Instrument of his (confident to him, as he thought) to murther them both. But this Man that was employed to execate that execrable Tragedy, having cruelly slain King Edward the eldest of the two, was moved partly by Remorse, and partly by some other mean, to save Richard his Brother; making a Report nevertheless to the Tyrant, that he had performed his Commandment for both Brethren. This Report was accordingly believed, and published generally. So that the World hath been possessed of an Opinion, that they both were barbarously made away, though ever Truth hath some sparks that flie abroad, until it appear in due time, as this hath had. But Almighty God, that stopped the mouth of the Lion, and saved little Joas from the Tyranny of Athaliah, when she massacred the King's Children; and did save Isaac, when the hand was stretched forth to sacrifice him, preserved the second Brother. For I my self, that stand here in your presence, am that very Richard, Duke of York, Brother of that infortunate Prince, King Edward the Fifth, now the most rightful surviving Heir-male to that Victorious and most Noble Edward, of that name the Fourth, late King of England. For the manner of my Escape, it is fit it should pass in silence, or (at least) in a more secret Relation: for that it may concern some alive, and the memory of some that are dead. Let it suffice to think, that I had then a Mother living, a Queen, and one that expected daily such a Commandment from the Tyrant, for the murthering of her Children. Thus in my tender age escaping by God's mercy out of London, I was secretly conveyed over Sea. Where, after a time, the Party that had me in Charge, (upon what new Fears, change of Mind; or Practice, God knoweth) suddenly forsook me. Whereby I was forced to wander abroad, to seek mean Conditions for the sustaining of my Life. Wherefore distracted between several Passions, the one of fear to be known, lest the Tyrant should have a new Attempt upon me; the other of Grief and Disdain to be unknown, and to live in that base and servile manner that I did; I resolved with my self to expect the Tyrant's death, and then to put my self into my Sisters hands, who was next Heir to the Crown. But in this season, it happened one Henry Tidder, Son to Edmond Tidder Earl of Richmond,

to come from France, and enter into the Realm, and by subtil and foul means to obtain the Crown of the same, which to me rightfully appertained. So that it was but a change, from Tyrant to Tyrant. This Henry, my extreme and mortal Enemy, so soon as he had knowledge of my being alive, imagined and wrought all the subtil ways and means he could, to procure my final Destruction. For my mortal Enemy hath not only falsly surmised me to be a feigned Person, giving me Nick-names, so abusing the World; but also, to deferr and put me from entry into England, hath offered large summs of Money, to corrupt the Princes and their Ministers, with whom I have been retained; and made importune Labours to certain Servants about my Person, to murther or Poyson me, and others to forsake and leave my righteous Quarrel, and to depart from my Service, as Sir Robert Clifford, and others. So that every man of Reason may well perceive, that Henry, calling himself King of England, needed not to have bestowed such great summs of Treasure, nor so to have busied himself with importune and incessant Labour and Industry, to compass my Death and Ruine, if I had been such a feigned Person. But the truth of my Cause being so manifest, moved the most Christian King Charles, and the Lady Duchess Dowager of Burgundy, my most dear Aunt, not only to acknowledge the truth thereof, but lovingly to assist me. But it seemeth that God above (for the good of this whole Island, and the knitting of these two Kingdoms of England and Scotland in a strait Concord and Amity, by so great an Obligation) had reserved the placing of me in the Imperial Throne of England, for the Arms and Succours of your Grace. Neither is it the first time that a King of Scotland hath supported them, that were bereft and spoiled of the Kingdom of England; as of late (in fresh memory) it was done in the Person of Henry the Sixth. Wherefore for that your Grace hath given clear signs, that you are in no Noble quality inferiour to your Royal Ancestors; I, so distressed a Prince, was hereby moved to come and put my self into your Royal Hands, desiring your Assistance to recover my Kingdom of England; promising faithfully to bear my self towards your Grace no otherwise, than if I were your own Natural Brother, and will upon the Recovery of mine Inheritance, gratefully do you all the Pleasure that is in my utmost Power.

AFter Perkin had told his Tale, King James answered bravely and wisely;

That whatsoever he were, he should not repent him of putting himself into his hand.

And from that time forth, though there wanted not some about him, that would have perswaded him, that all was but an Illusion; yet notwithstanding, either taken by Perkin's amiable and alluring behaviour, or inclining to the recommendation of the great Princes abroad, or willing to take an occasion of a War against King Henry, he entertained him in all things, as became the person of Richard Duke of York; embraced his Quarrel; (and the more to put it out of doubt, that he took him to be a great Prince, and not a Representation only) he gave consent that this Duke should take to Wife the Lady Catherine Gordon, Daughter to Earl Huntley, being a near Kinswoman to the King himself, and a young Virgin of excellent beauty and virtue.

Not long after, the King of Scots in person, with Perkin in his company, entred with a great Army (though it consisted chiefly of Borderers, being raised somewhat suddenly) into Northumberland. And Perkin, for a Perfume before him as he went, caused to be published a Proclamation of this tenour following, in the name of Richard Duke of York, true Inheritor of the Crown of England.

IT hath pleased God, who putteth down the Mighty from their Seat, and exalteth the Humble, and suffereth not the hopes of the Just to perish in the end, to give Us means at the length, to shew Our Selves armed unto Our Lieges and People of England. But far be it from Us, to intend their hurt and damage, or to make War upon them, otherwise than to deliver Our Self and them from Tyranny and Oppression. For, Our mortal Enemy Henry Tidder, a false of the Crown of England, (which tolls by Natural and Lineal Right appertaineth) knowing in his own Heart Our undoubted Right, (We being the very Richard, Duke of York; younger Son, and now surviving Heir-male of the Noble and Victorious Edward the Fourth, late King of England) hath not only deprived Us of Our Kingdom, but likewise by all foul and wicked means, sought to betray Us, and bereave Us of Our Life. Yet if his Tyranny only extended it self to Our Person (although Our Royal Blood teacheth Us to be sensible of Injuries) it should be less to Our

Grief. But this Tidder, who boasteth himself to have overthrown a Tyrant, hath ever since his first entrance into his Usurped Reign, put little in practice, but Tyranny and the feats thereof.

For King Richard Our unnatural Uncle, although desire of Rule did blind him, yet in his other actions (like a true Plantagenet) was Noble, and loved the Honour of the Realm, and the Contentment and Comfort of his Nobles and People. But this Our Mortal Enemy (agreeable to the meanness of his Birth) hath trod under foot the Honour of this Nation; selling Our hest Confederates for Money, and making Merchandize of the Blood, Estates, and Fortunes of Our Peers and Subjects, by feigned wars, and dishonourable Peace, only to enrich his Coffers. Nor unlike hath been his hateful Misgovernment, and evil Deportments at home. First, he hath (to fortifie his false Quarrel) caused divers Nobles of this Our Realm (whom he held Suspect, and stood in dread of) to be cruelly murthred; as Our Cousin Sir William Stanley Lord Chamberlain, Sir Simon Mountfort, Sir Robert Ratcliff, William Dawbeney, Humphrey Stafford, and many others, besides such as have dearly bought their Lives with intolerable Ransoms. Some of which Nobles are now in the Sanctuary. Also he hath long kept, and yet keepeth in Prison, Our right entirely beloved Cousin Edward, Son and Heir to Our Uncle Duke of Clarence, and others; with-bolding from them their rightful Inheritance, to the intent they should never be of might and power, to aid and assist Us at Our need, after the duty of their Liegeances. He also married by compulsion certain of Our Sisters, and also the Sister of Our said Cousin the Earl of Warwick, and divers other Ladies of the Royal Blood, unto certain of his Kinsmen and Friends of simple and low Degree, and putting apart all well-disposed Nobles, he hath none in favour and trust about his Person, but Bishop Fox, Smith, Bray, Lovel, Oliver King, David Owen, Risley, Turbervile, Tiler, Cholmley, Empson, James Hobart, John Cut, Garth, Henry Wyat, and such other Cattiffs and Villains of Birth, which by subtil Inventions and Pilling of the People, have been the principal Finders, Occasioners, and Counsellors of the Mis-rule and Mischief now reigning in England.

We remembring these Premisses, with the great and execrable Offences daily committed and done by Our foresaid great Enemy, and his Adherents, in breaking the Liberties and Franchises of Our Mother the Holy Church, upon pretences of Wicked and Heathenish Policy, to the high displeasure of Almighty God; besides the manifold Treasons, abominable Murthers Man-slaughters, Robberies, Extortions, the daily Pilling of the People, by Disms, Taxes, Tallages, Benevolences, and other unlawful Impositions, and grievous Exactions, with many other heinous Effects, to the likely destruction and desolation of the whole Realm; shall by God's grace, and the help and assistante of the great Lords of Our Blood, with the counsel of other sad Persons, see that the Commodities of Our Realm be employed to the most advantage of the same; the intercourse of Merchandise betwixt Realm and Realm, to be ministred and handled, as shall more be to the Common-weal and prosperity of Our Subjects; and all such Disms, Taxes, Tallages, Benevolences, unlawful Impositions, and grievous Exactions, as be above rehearsed to be fore-done and laid apart, and never from henceforth to be called upon, but in such cases as Our Noble Progenitors, Kings of England, have of old time been accustomed to have the ayd, succour, and help of their Subjects and true Liege-men.

And further, We do out of Our Grace and Clemency, hereby as well publish and promise to all our Subjects Remission and free Pardon of all By-past Offences whatsoever, against Our Person, or Estate, in adhering to Our said Enemy, by whom (We know well) they have been mis-led, if they shall within time convenient submit themselves unto Us. And for such as shall come with the foremost, to assist Our Righteous Quarrel, We shall make them so far partakers of Our Princely Favour and Bounty; as shall be highly for the Comfort of them and theirs, both during their life, and after their death. As also We shall by all means, which God shall put into Our hands, demean Our selves to give Royal contentment to all Degrees and Estates of Our People, maintaining the Liberties of Holy Church in their Entire, preserving the Honours, Priviledges, and Prebeminences of Our Nobles, from contempt or disparagement, according to the dignity of their Blood. We shall also unyoak. Our People from all heavy

Burthens and Endurances, and confirm Our Cities, Boroughs, and Towns in their Charters and Freedoms, with enlargement, where it shall be deserved, and in all points give Our Subjects cause to think, that the blessed and debonair Government of Our Noble Father King Edward (in his last times) is in Us revived.

And for as much as the putting to death, or taking alive of Our said Mortal Enemy, may be a mean to stay much effusion of Blood, which otherwise may ensue, if by Compulsion or fair Promises, he shall draw after him any number of Our Subjects to resist Us; whith We desire to avoid (though We be certainly informed, that Our said Enemy is purposed and prepared to flie the Land, having already made over great masses of the Treasure of Our Crown, the better to support him in Forein Parts) We do hereby declare, That whosoever shall take or distress Our said Enemy (though the Party be of never so mean a Condition) he shall be by Us rewarded with a Thousand Pound in Money, forthwith to be laid down to him, and an Hundred Marks by the year of Inheritance; besides that he may otherwise merit, both toward God and all good People, for the destruction of such a Tyrant.

Lastly, We do all men to wit; and herein We take also God to witness, That whereas God hath moved the Heart of Our dearest Cousin, the King of Scotland, to aid Us in Person, in this Our righteous Quarrel; it is altogether without any Pact or Promise, or so much as demand of any thing, that may prejudice Our Crown, or Subjects: But contrariwise with promise on Our said Cousin's part, that whensoever he shall find Us in sufficient strength to get the upper hand of Our Enemy, (which we hope will be very suddenly) he will forthwith peaceably return into his own Kingdom; contenting himself only with the glory of so Honourable an Enterprize, and Our true and faithful Love and Amity. Which We shall ever (by the Grace of Almighty God) so order, as shall be to the great comfort of both Kingdoms.

BUT Perkin's Proclamation did little edifie with the people of England; neither was he the better welcom for the company he came in. Wherefore the King of Scotland seeing none came in to Perkin, nor none stirred any where in

his favour, turned his Enterprize into a Rode; and wasted and destroyed the Countrey of Northumberland with fire and sword. But hearing that there were Forces coming against him, and not willing that they should find his men heavy and laden with booty, he returned into Scotland with great Spoils, deferring further prosecution, till another time. It is said, that Perkin acting the part of a Prince handsomly, when he saw the Scottish fell to waste the Countrey, came to the the King in a passionate manner, making great lamentation, and desired, That that might not be the manner of making the War, for that no Crown was so dear to his mind, as that he desired to purchase it with the blood and ruine of his Countrey. Whereunto the King answered half in sport; that he doubted much, he was careful for that that was none of his, and that he should be too good a Steward for his Enemy, to save the Countrey to his use.

By this time, being the Eleventh year of the King, the Interruption of Trade between the English and the Plemmish, began to pinch the Merchants of both Nations very sore. Which moved them, by all means they could devise, to affect and dispose their Savereigns respectively, to open the Intercourse again. Wherein, time favoured them. For the ArchDuke and his Council began to see, that Perkin would prove but a Runnagate, and Citizen of the World; and that it was the part of Children to fall out about Babies. And the King on his part, after the Attempts upon Kent and Northumberland, began to have the business of Perkin in less estimation; so as he did not put it to accompt, in any Consultation of State. But that that moved him most, was, that being a King that loved Wealth and Treasure, he could not endure to have Trade sick, nor any Obstruction to continue in the Gate-vein, which disperseth that blood. And yet he kept State so far, as first to be sought unto. Wherein the Merchant-Adventurers likewise, (being a strong Company at that time, and well under-set with rich men, and good order) did hold out bravely; taking off the Commodities of the Kingdom, though they lay dead upon their hands for want of Vent. At the last, Commissioners met at London, to Treat. On the King’s part; Bishop Fox Lord Privy Seal, Viscount Wells; Kendal Prior of St. John’s, Warham Master of the Polls, who began to gain much upon the King’s opinion; Urswick, who was

almost ever one; and Risley. On the ArchDuke's part, the Lord Bevers his Admiral, the Lord Verunsel President of Flanders, and others. These concluded a perfect Treaty, both of Amity and Intercourse, between the King and the ArchDuke; containing Articles both of State, Commerce, and Free-Fishing. This is that Treaty, which the Flemings call at this day; Intercursus Magnus; both because it is more compleat, than the precedent Treaties of the Third and Fourth years of the King: and chiefly to give it a difference from the Treaty (that followed in the One and twentieth year of the King, which they call Intercursus Malus. In this Treaty, there was an express Article against the Reception of the Rebels of either Prince by other; purporting, that if any such Rebel should be required by the Prince whose Rebel he was, of the Prince Confederate, that forthwith the Prince Confederate should by Proclamation command him to avoid the Countrey. Which if he did not within fifteen days, the Rebel was to stand proscribed, and put out of Protection. But nevertheless in this Article, Perkin was not named, neither perhaps contained, because he was no Rebel. But by this means his wings were clipt off his Followers, that were English. And it was expresly comprised in the Treaty, that it should extend to the Territories of the Duchess Dowager. After the Intercourse thus restored, the English Merchants came again to their Mansion at Antwerp, where they were received with Procession and great Joy.

The Winter sollowing, being the Twelfth year of his reign, the King called again his Parliament: Where he did much exaggerate both the Malice, and the cruel Predatory War lately made by the King of Scotland; That that King, being in Amity with him, and no ways provoked, should so burn in hatred towards him, as to drink of the Lees and Dregs of Perkin's Intoxication, who was every where else detected and discarded. And that when he perceived it was out of his reach, to do the King any hurt, he had turned his Arms upon unarmed and unprovided people, to spoil only and depopulate, contrary to the Laws both of War and Peace: Concluding, that he could neither with Honour, nor with the safety of his People, to whom he did owe Protection, let pass these wrongs unrevenged. The Parliament understood him well, and gave him a Subsidy,

limited to the summ of one hundred and twenty thousand Pounds, besides two Fifteens. For his Wars were always to him as a Mine of Treasure, of a strange kind of Ore; Iron at the top, and Gold and Silver at the bottom. At this Parliament (for that there had been so much time spent in making Laws the year before; and for that it was called purposely in respect of the Scottish War, there were no Laws made to be remembred. Only there passed a Law, at the Suit of the Merchant-Adventurers of England, against the Merchant-Adventurers of London, for Monopolizing and exacting upon the Trade: which it seemeth they did, a little to save themselves, after the hard time they had sustained by want of Trade. But those Innovations were taken away by Parliament.

But it was fatal to the King, to fight for his Money. And though he avoided to fight with Enemies abroad, yet he was still enforced to fight for it with Rebels at home. For no sooner began the Subsidie to be levied in Cornwal, but the people there began to grudge and murmur. The Cornish being a race of men, stout of stomach, mighty of body and limb, and that lived hardly in a barren Countrey, and many of them could (for a need) live under ground, that were Tinners; they muttered extremely, that it was a thing not to be suffered, that for a little stir of the Scots, soon blown over, they should be thus grinded to Powder with Payments: And said, it was for them to pay, that had too much, and lived idly. But they would eat the bread they got with the sweat of their brows, and no man should take it from them. And as in the Tides of People once up, there want not commonly stirting Winds to make them more rough: So this People did light upon two Ring-leaders, or Captains of the Rout. The one was one Michael Joseph, a Black-smith or Farrier of Bodmin; a notable talking Fellow, and no less desirous to be talked of. The other was Thomas Flammocke, a Lawyer; who, by telling his neighbours commonly upon any occasion, that the Law was on their side, had gotten great sway amongst them. This man talked learnedly, and as if he could tell how to make a Rebellion, and never break the Peace. He told the people, that Subsidies were not to be granted nor levied in this case; that is, for Wars of Scotland, (for that the Law had provided another course, by service of Escuage, for those Journies,) much less when all was quiet, and War was

made but a Pretence to poll and pill the People: And therefore that it was good, they should not stand now like sheep before the Shearers, but put on Harness, and take Weapons in their hands: Yet to do no creature hurt; but go and deliver the King a Strong Petition, for the laying down of those grievous Payments, and for the punishment of those that had given him that Counsel; to make others beware how they did the like in time to come: And said, for his part he did not see how they could do the duty of true English-men, and good Liege-men, except they did deliver the King from such wicked Ones that would destroy both Him and the Countrey. Their aim was at Archbishop Morton, and Sir Reginald Bray, who were the King's Skreens in this Envy.

After that these two, Flammocke and the Black-smith, had, by joynt and several Pratings, found tokens of consent in the Multitude, they offered themselves to lead them, until they should hear of better men, to be their Leaders; which they said would be ere long: Telling them further, that they would be but their servants, and first in every danger; but doubted not but to make both the West-end and East-end of England to meet in so good a Quarrel; and that all (rightly understood) was but for the King's service. The People, upon these seditious Instigations, did arm (most of them with Bows, and Arrows, and Bills, and such other Weapons of rude and Countrey People) and forthwith under the Command of their Leaders (which in such cases is ever at pleasure) marched out of Cornwal, through Devonshire, unto Taunton in Somersetshire, without any slaughter, violence, or spoil of the Countrey. At Taunton they killed, in fury, an officious and eager Commissioner for the Subsidie, whom they called the Provoct of Perin. Thence they marched to Wells: where the Lord Audley (with whom their Leaders had; before, some secret Intelligence) a Noble-man of an ancient Family, but unquiet and popular, and aspiring to Ruine, came-in to them, and was by them (with great gladness and cries of Joy) accepted as their General; they being now proud, that they were led by a Noble-man. The Lord Audley led them on from Wells to Salisbury, and from Salisbury to Winchester. Thence the foolish people, who (in effect) led their Leaders, had a mind to be led into Kent; fancying, that the people there would joyn with them, contrary to all

reason or judgment; considering, the Kentish-men had shewed great Loyalty and Affection to the King so lately before. But the rude People had heard Flammock say, that Kent was never Conquered, and that they were the freest People of England. And, upon these vain Noises, they looked for great matters at their hands, in a cause which they conceited to be for the liberty of the Subject. But when they were come into Kent, the Countrey was so well setled, both by the King's late kind usage towards them, and by the credit and power of the Earl of Kent, the Lord Abergaveny, and the Lord Cobham, as neither Gentleman nor Yeoman came-in to their aid; which did much damp and dismay many of the simpler sort: Insomuch, as divers of them did secretly flie from the Army, and went home. But the sturdier sort, and those that were most engaged, stood by it, and rather waxed Proud, than failed in Hopes and Courage. For as it did somewhat appall them, that the people came not in to them; so it did no less encourage them, that the King's Forces had not set upon them, having marched from the West unto the East of England. Wherefore they kept on their way, and encamped upon Black-heath, between Greenwich and Eltham; threatning either to bid Battel to the King, (for now the Seas went higher than to Morton, and Bray) or to take London within his view, imagining with themselves, there to find no less Fear, than Wealth.

But to return to the King. When first he heard of this Commotion of the Cornish-men occasioned by the Subsidie, he was much troubled therewith: Not for it self, but in regard of the Concurrence of other Dangers, that did hang over him at that time. For he doubted lest a War from Scotland, a Rebellion from Cornwal, and the Practices and Conspiracies of Perkin and his Partakers, would come upon him at once; Knowing well, that it was a dangerous Triplicity to a Monarchy, to have the Arms of a Foreiner, the Discontents of Subjects, and the Title of a Pretender, to meet. Nevertheless, the Occasion took him in some part well provided. For as soon as the Parliament had broken up, the King had presently raised a puissant Army, to war upon Scotland. And King James of Scotland likewise, on his part, had made great preparations either for defence, or

for new assailing of England. But as for the King's Forces, they were not only in preparation, but in readiness presently to set forth, under the Conduct of Dawbeney, the Lord Chamberlain. But as soon as the King understood of the Rebellion of Cornwal, he stayed those Forces, retaining them for his own service and safety. But therewithal he dispatched the Earl of Surrey into the North, for the defence and strength of those parts, in case the Scots should stir. But for the course he held towards the Rebels, it was utterly differing from his former custom, and practice; which was ever full of forwardness and celerity, to make head against them, or to set upon them as soon as ever they were in Action. This he was wont to do. But now, besides that he was attempered by Years, and less in love with Dangers, by the continued Fruition of a Crown; it was a time when the various appearance to his Thoughts of Perils of several Natures, and from divers Parts, did make him judge it his best and surest way, to keep his Strength together, in the Seat and Centre of his Kingdom. According to the ancient Indian Emblem; in such a swelling Season, To hold the hand upon the middle of the Bladder, that no side might rise. Besides, there was no necessity put upon him, to alter this Counsel. For neither did the Rebels spoil the Countrey; in which case it had been dishonour to abandon his People: Neither on the other side, did their Forces gather or increase, which might hasten him to precipitate and assail them, before they grew too strong. And lastly, both Reason of Estate and War seemed to agree with this course; For that Insurrections of base People are commonly more furious in their Beginnings. And by this means also he had them the more at Vantage, being tired and harrassed with a long march; and more at Mercy, being cut off far from their Countrey, and therefore not able by any sudden flight to get to Retrait, and to renew the Troubles.

When therefore the Rebels were encamped on Black-heath, upon the Hill, whence they might behold the City of London, and the fair Valley about it: the King knowing well, that it stood him upon, by how much the more he had hitherto protracted the time in not encountring them, by so much the sooner to dispatch with them, that it might appear to have been no Coldness in foreslowing, but Wisdom in choosing his time; resolved with all speed to assail

them, and yet with that Providence, and Surety, as should leave little to Venture or Fortune. And having very great and puissant Forces about him, the better to master all Events and Accidents, he divided them into three parts. The first was led by the Earl of Oxford in chief, assisted by the Earls of Essex and Suffolk. These Noble-men were appointed, with some Cornets of Horses and Bands of Foot, and good store of Artillery wheeling about to put themselves beyond the Hill, where the Rebels were encamped; and to beset all the skirts and descents thereof, except those that lay towards London; whereby to have these Wild Beasts (as it were) in a Toyl. The second part of his Forces (which were those that were to be most in Action, and upon which he relyed most for the Fortune of the Day) he did assign to be led by the Lord Chamberlain, who was appointed to set upon the Rebels in Front, from that side which is toward London. The third part of his Forces (being likewise great and brave Forces) he retained about himself, to be ready, upon all Events, to restore the Fight, or consummate the Victory; and mean while, to secure the City. And for that purpose he encamped in Person in St. George's Fields, putting himself between the City and the Rebels. But the City of London (specially at the first) upon the near encamping of the Rebels, was in great Tumult: As it useth to be with wealthy and populous Cities, (especially those, which, for greatness and fortune, are Queens of their Regions) who seldom see out of their Windows, or from their Towers, an Army of Enemies. But that which troubled them most, was the conceit, that they dealt with a Rout of People, with whom there was no Composition, or Condition, or orderly Treating, if need were, but likely to be bent altogether upon Rapine and Spoil. And although they had heard that the Rebels had behaved themselves quietly and modestly, by the way as they went; yet they doubted much, that would not last, but rather make them more hungry, and more in appetire, to fall upon spoil in the end. Wherefore there was great running to and fro of People, some to the Gates, some to the Walls, some to the Water ; giving themselves Alarms, and Panick fears continually. Nevertheless, both Tate the Lord Mayor, and Shaw, and Haddon, the Sheriffs, did their parts stoutly and well, in arming and ordering the People. And the King likewise did adjoyn some Captains of

experience in the Wars, to advise and assist the Citizens. But soon aften, when they understood that the King had so ordered the matter, that the Rebels must win three Battels, before they could approach the City, and that he had put his own Person between the Rebels and them, and that the great care was rather how to impound the Rebels, that none of them might escape, than that any doubt was made to vanquish them; they grew to be quiet and out of fear. The rather, for the confidence they reposed (which was not small) in the three Leaders, Oxford, Essex, and Dawbency; all, men famed and loved amongst the People. As for Jasper Duke of Bedford, whom the King used to employ with the first in his Wars, he was then sick, and dyed soon after.

It was the two and twentieth of June, and a Saturday (which was the day of the week the King fancied) when the Battel was fought; though the King had, by all the Art he could devise; given out a false Day, as if he prepared to give the Rebels Battel on the Monday following, the better to find them unprovided, and in disarray. The Lords, that were appointed to circle the Hill, had some days before planted themselves (as at the Receipt) in places convenient. In the afternoon, towards the decline of the day, (which was done, the better to keep the Rebels in opinion that they should not fight that day) the Lord Dawbeney marched on towards them, and first beat some Troops of them from Detford-bridge, where they fought manfully: But being in no great number were soon driven back, and fled up to their main Army upon the Hill. The Army, at that time hearing of the approach of the King's Forces, were putting themselves in Array, not without much Confusion. But neither had they placed upon the first high-ground towards the Bridge, any Forces to second the Troops below, that kept the Bridge; neither had they brought forwards their Main-Battel (which stood in array far into the Heath) near to the ascent of the Hill. So that the Earl with his Forces mounted the Hill, and recovered the Plain, without resistance. The Lord Dawbeney charged them with great fury; Insomuch, as it had like (by accident) to have brandled the Fortune of the Day. For, by inconsiderate Forwardness in fighting in the head of his Troops, he was taken by the Rebels; but, immediately rescued, and delivered. The Rebels maintained the Fight for a

small time, and for their Persons shewed no want of courage: but being ill armed, and ill led, and without Horse or , they were with no great difficulty cut in pieces, and put to flight. And for their three Leaders; the Lord Audley, the Black-smith, and Flammocke, (as, commonly the Captains of Commotions are but half-couraged Men) suffered themselves to be taken alive. The number slain on the Rebels part, were some two thousand men, their Army amounting (as it is said) unto the number of sixteen thousand. The rest were (in effect) all taken; for that the Hill, as was said, was encompassed with the King's Forces round about. On the King's part there dyed about three hundred; most of them shot with Arrows, which were reported to be of the length of a Taylor's-yard: So strong and mighty a Bow the Cornish-men were said to draw.

The Victory thus obtained, the King created divers Bannerets, as well upon Black-heath, where his Lieutenant had won the Field (whither he rode in Person to perform the said Creation) as in St. George's Fields, where his own person had been encamped. And for matter of Liberality, he did (by open Edict) give the goods of all the Prisoners, unto those that had taken them; either to take them in Kind, or compound for them as they could. After matter of Honour and Liberality, followed matter of Severity and Execution. The Lord Audley was led from Newgate to Tower-hill, in a Paper-Coat painted with his own Arms; the Arms reversed, the Coat torn, and he at Tower-hill beheaded. Flammocke, and the Black-smith were hanged, drawn, and quartered at Tyburn; The Black-smith taking pleasure upon the Hurdle (as it seemeth by words that he uttered) to think that he should be famous in after-times. The King was once in mind to have sent down Flammocke, and the Black-smith, to have been executed in Cornwal, for the more terrour. But, being advertised, that the Countrey was yet unquiet and boyling, he thought better not to irritate the People further. All the rest were pardoned by Proclamation, and to take out their Pardons under Seal, as many as would: So that, more than the blood drawn in the Field, the King did satisfie himself with the lives of only three Offenders, for the expiation of this great Rebellion.

It was a strange thing, to observe the variety and inequality of the King's Executions and Pardons. And a man would think it, at the first, a kind of Lottery or Chance. But, looking into it more nearly, one shall find there was reason for it, much more perhaps than (after so long a distance of time) we can now discern. In the Kentish Commotion (which was but an handful of men) there were executed to the number of one hundred and fifty; and, in this so mighty a Rebellion, but three: Whether it were, that the King put to accompt the men that were slain in the field; or that he was not willing to be severe in a popular cause; or that the harmless behaviour of this People (that came from the West of England, to the East, without mischief almost, or spoil of the Countrey) did somewhat mollifie him, and move him to compassion; or lastly, that he made a great difference between People, that did rebel upon Wantonness, and them that did rebel upon Want.

After the Cornish-men were defeated, there came from Calioe to the King, an honourable Ambassage from the French King, which had arrived at Calice a Month before, and there was stayed in respect of the troubles; but honourably entertained and defrayed.

The King, at their first coming, sent unto them, and prayed them to have patience, till a little Smoak, that was raised in his Countrey, were over, which would soon be: Slighting (as his manner was) that openly, which nevertheless he intended seriously.

This Ambassage concerned no great Affair; but only the Prolongation of Days for payment of Moneys, and some other Particulars of the Frontiers. And it was (indeed) but a wooing Ambassage; with good respects to entertain the King in good affection: but nothing was done, or handled, to the derogation of the King's late Treaty with the Italians.

But, during the time that the Cornish-men were in their march towards London, the King of Scotland (well advertised of all that passed, and knowing himself sure of War from England, whensoever those Stirs were appeased) neglected not his opportunity; But, thinking the King had his hands full, entred

the Frontiers of England again with an Army, and besieged the Castle of Norham in Person, with part of his Forces, sending the rest to forrage the Countrey. But Fox, Bishop of Duresm (a wise man, and one that could see through the Present, to the Future) doubting as much before, had caused his Castle of Norham to be strongly fortified, and furnished, with all kind of Munition: And had manned it likewise, with a very great number of tall Soldiers, more than for the proportion of the Castle; reckoning rather upon a sharp Assault, than a long Siege. And for the Countrey likewise, he had caused the people withdraw their Cattel and Goods into Fact Places, that were not of easie approach; and sent in post to the Earl of Surrey (who was not far off, in Yorkshire) to come in diligence to the Succour. So as the Scottish King both failed of doing good upon the Castle, and his men had but a catching Harvest of their Spoils. And when he understood, that the Earl of Surrey was coming on with great Forces, he returned back into Scotland. The Earl finding the Castle freed, and the Enemy retired, pursued with all into Scotland; hoping to have overtaken the Scottish King, and to have given him Battel; But not attaining him in time, sate down before the Castle of Aton (one of the strongest places, then esteemed, between Berwick and Edenburgh) which in a small time he took. And soon after, the Scottish King retiring further into his Countrey, and the weather being extraordinary foul and stormy, the Earl returned into England. So that the Expeditions on both parts were (in effect) but a Castle taken, and a Castle distressed; not answerable to the puissance of the Forces, nor to the heat of the Quarrel, nor to the greatness of the Expectation.

Amongst these Troubles, both Civil and External, came into England from Spain Peter Hialas, some call him Elias, (surely he was the fore runner of the good Hap, that we enjoy at this day. For his Ambassage set the Truce between England and Scotland; the Truce drew on the Peace; the Peace the Marriage; and the Marriage the Union of the Kingdoms) a man of great Wisdom, and (as those times were) not unlearned; sent from Ferdinando and Isabella Kings of Spain unto the King, to treat a Marriage between Catherine their second Daughter, and Prince Arthur. This Treaty was by him set in a very good way, and almost brought to perfection. But it so fell out by the way, that upon some Conference

which he had with the King touching this business, the King (who had a great dexterity in getting suddenly into the bosom of Ambassadors of forein Princes, if he liked the men; Insomuch as he would many times communicate with them of his own affairs; yea and employ them in his service) fell into speech and discourse incidently, concerning the ending the Debates and differences with Scotland. For the King naturally did not love the barren Wars with Scotland, though he made his profit of the Noise of them. And he wanted not in the Council of Scotland those that would advise their King to meet him at the half-way, and to give over the War with England; pretending to be good Patriots, but indeed favouring the affairs of the King. Only his heart was too great to begin with Scotland for the motion of Peace. On the other side, he had met with an Allie of Ferdinando of Arragon, as fit for his turn as could be. For after that King Ferdinando had; upon assured confidence of the Marriage to succeed, taken upon him the person of a Fraternal Allie to the King, he would not let (in a Spanish gravity) to counsel the King in his own affairs. And the King on his part not being wanting to himself, but making use of every man's humours, made his advantage of this in such things as he thought either not decent, or not pleasant to proceed from himself; putting them off, as done by the Counsel of Ferdinando. Wherefore he was content that Hialas (as in a matter moved and advised from Hialas himself) should go into Scotland, to treat of a Concord between the two Kings. Hialas took it upon him: and coming to the Scottish King, after he had with much Art brought King James to hearken to the more safe and quiet Counsels, wrote unto the King, that he hoped that Peace would with no great difficulty cement and close, if he would send some wise and temperate Counsellor of his own, that might treat of the Conditions. Whereupon the King directed Bishop Fox (who at that time was at his Castle of Norham) to confer with Hialas, and they both to treat with some Commissioners, deputed from the Scottish King. The Commissioners on both sides met. But after much dispute upon the Articles and Conditions of Peace, propounded upon either part, they could not conclude a Peace. The chief Impediments thereof was the demand of the King, to have Perkin delivered into his hands, as a reproach to all Kings,

and a person not protected by the Law of Nations. The King of Scotland, on the other side, peremptorily denied so to do; saying, That he (for his part) was no competent Judge of Perkin's Title: But that he had received him as a Suppliant, protected him as a person fled for Refuge, espoused him with his Kinswoman, and aided him with his Arms, upon the belief that he was a Prince; And therefore that he could not now with his Honour so unrip, and (in a sort) put a Lye upon all that he had said and done before, as to deliver him up to his Enemies. The Bishop likewise (who had certain proud instructions from the King, at the least in the Front, though there were a pliant clause at the Foot, that remitted all to the Bishop's discretion, and required him by no means to break off in ill terms) after that he had failed to obtain the delivery of Perkin, did move a second point of his Instructions; which was, that the Scottish King would give the King an Enterview in Person at Newcastle. But this being reported to the Scottish King, his answer was, That he meant to treat a Peace, and not to go a begging for it. The Bishop also (according to another Article of his Instructions) demanded Restitution of the Spoils taken by the Scottish, or Damages for the same. But the Scottish Commissioners answered; That that was but as Water spilt upon the ground, which could not be gotten up again; and that the King's People were better able to bear the loss, than their Master to it. But in the end (as persons capable of Reason) on both sides they made a kind of Recess, than a Breach of Treaty, and concluded upon a Truce for some Months following. But the King of Scotland, though he would not formally retract his judgement of Perkin, wherein he had engaged himself so far; yet in his private opinion, upon often speech with the English-men, and divers other advertisements, began to suspect him for a Counterfeit. Wherefore in a Noble fashion he called him unto him, and recounted the benefits and favours that he had done him, in making him his Allie, and in provoking a Mighty and Opulent King by an Offensive War in his Quarrel, for the space of two years together. Nay more; that he had refused an Honourable Peace, whereof he had a fair Offer, if he would have delivered him; and that to keep his promise with him, he had deeply offended both his Nobles and People, whom he might not hold in any long discontent. And therefore

required him to think of his own Fortunes, and to choose out some fitter place for his Exile: Telling him withal, that he could not say, but the English had forsaken him before the Scottish, for that upon two several Tryals, none had declared themselves on his side. But nevertheless he would make good what he said to him at his first receiving, which was, That he should not repent him, for putting himself into his hands; For that he would not cast him off, but help him with Shipping and means, to transport him where he should desire. Perkin, not descending at all from his Stage-like Greatness, answered the King in few words; That he saw his time was not yet come; But whatsoever his Fortunes were, he should both think and speak Honour of the King. Taking his leave, he would not think on Flanders, doubting it was but hollow ground for him, since the Treaty of the ArchDuke concluded the year before; but took his Lady, and such followers as would not leave him, and sailed over into Ireland.

This Twelfth year of the King, a little before this time, Pope Alexander (who loved best those Princes that were furthest off, and with whom he had least to do) taking very thankfully the King's late entrance into League, for the defence of Italy, did remunerate him with an Hallowed Sword, and Cap-of-Maintenance sent by his Nuncio. Pope Innocent had done the like, but it was not received in that Glory. For the King appointed the Mayor and his Brethren to meet the Pope's Orator at London-Bridge, and all the Streets between the Bridge-foot and the Palace of St. Pauls (where the King then lay) were garnished with the Citizens, standing in their Liveries. And the morrow after (being All-hallows day) the King, attended with many of his Prelates, Nobles, and principal Courtiers, went in Procession to St. Pauls, and the Cap and Sword were born before him. And after the Procession, the King himself remaining seated in the Choir, the Lord Archbishop upon the greece of the Choir, made a long Oration, setting forth the greatness and Eminency of that Honour, which the Pope (in these Ornaments and Ensigns of Benediction) had done the King, and how rarely, and upon what high deserts they used to be bestowed. And then recited

the Kings principal Acts and Merits, which had made him appear worthy in the eyes of his Holiness of this great Honour.

All this while the Rebellion of Cornwal (whereof we have spoken) seemed to have no relation to Perkin; save that perhaps Perkin's Proclamation had stricken upon the right Vein, in promising to lay down Exactions and Payments, and so had made them now and then have a kind thought on Perkin. But now these Bubbles by much stirring began to meet, as they use to do upon the top of Water. The King's lenity (by that time the Cornish Rebels, who were taken and pardoned, and (as it was said) many of them sold by them that had taken them, for twelve pence and two shillings a piece, were come down into their Countrey) had rather imboldened them, than reclaimed them: Insomuch, as they stuck not to say to their Neighbours and Countrey-men, that The King did well to pardon them, for that he knew he shouldl eave few Subjects in England, if he hanged all that were of their mind: And began whetting and inciting one another to renew the Commotion. Some of the subtilest of them, hearing of Perkin's being in Ireland, found means to send to him, to let him know, that if he would come over to them, they would serve him.

When Perkin heard this News, he began to take heart again, and advised upon it with his Council, which were principally three; Herne a Mercer, that had fled for Debt; Skelton a Taylor, and Astley a Scrivener: for Secretary Frion was gone. These told him, that he was mightily overseen, both when he went into Kent, and when he went into Scotland. The one being a place so near London, and under the King's Nose; and the other a Nation so distasted with the People of England, that if they had loved him never so well, yet they could never have taken his part in that Company. But if he had been so happy, as to have been in Cornwal at the first, when the People began to take Arms there, he had been crowned at Westminster before this time. For, these Kings (as he had now experience) would sell poor Princes for shooes: But he must rely wholly upon People; and therefore advised him to sail over with all possible speed into Cornwal. Which, accordingly he did; having in his Company four small Barques, with some six score or seven score fighting men. He arrived in September at

Whitsand-Bay; and forthwith came to Bodmin, the Black-smith's Town: Where there assembled unto him to the number of three thousand men of the rude People. There he set forth a new Proclamation, stroaking the People with fair Promises, and humouring them with Invectives against the King and his Government. And; as it fareth with Smoak, that never loseth it self till it be at the highest; he did now before his end raise his Stile, intituling himself no more Richard, Duke of York; but Richard the Fourth, King of England. His Council advised him, by all means, to make himself Master of some good walled Town; as well to make his Men find the sweetness of rich Spoils, and to allure to him all loose and lost People; by like hopes of Booty; as to be a sure Retrait to his Forces, in case they should have any ill Day, or unlucky Chance in the Field. Wherefore they took heart to them, and went on, and besieged the City of Exceter, the principal Town for Strength and Wealth in those Parts.

When they were come before Exceter, they forbare to use any Force at the first; but made continual Shouts and Out-cries, to terrifie the Inhabitants. They did likewise in divers places call and talk to them from under the Walls, to joyn with them, and be of their Party; telling them, that the King would make them another London, if they would be the first Town that should acknowledge him. But they had not the wit to send to them, in any orderly fashion, Agents, or chosen Men, to tempt them, and to treat with them. The Citizens on their part shewed themselves stout and loyal Subjects. Neither was there so much as any Tumult or Division amongst them: but all prepared themselves for a valiant Defence, and making good the Town. For, well they saw, that the Rebels were of no such Number or Power, that they needed to fear them as yet: and well they hoped, that before their Numbers increased, the King's Succours would come-in. And, howsoever, they thought it the extremest of Evils, to put themselves at the mercy of those hungry and disorderly People. Wherefore, setting all things in good order within the Town, they nevertheless let down with Cords, from several parts of the Walls privily, several Messengers (that, if one came to mischance, another might pass-on) which should advertise the King of the State of the Town, and implore his ayd. Perkin also doubted, that Succours would

come ere long; and therefore resolved to use his utmost Force to assault the Town: And for that purpose, having mounted Scaling-Ladders in divers places upon the Walls, made at the same instant an Attempt to force one of the Gates. But, having no Artillery nor Engins, and finding that he could do no good by ramming with Logs of Timber, nor by the use of Iron Bars and Iron Crows, and such other means at hand, he had no way left him, but to set one of the Gates on fire: which he did. But the Citizens, well perceiving the Danger, before the Gate could be fully consumed, blocked up the Gate, and some space about it on the inside, with Fagots and other Fuel: which they likewise set on fire, and so repulsed fire with fire; And, in the mean time, raised up Rampiers of earth, and cast up deep Trenches, to serve instead of Wall and Gate. And for the Escalada's, they had so bad success, as the Rebels were driven from the Walls, with the loss of two hundred men.

The King, when he heard of Perkin's Siege of Exceter, made sport with it, and said to them that were about him, that The King of Rake-hells was landed in the West, and that he hoped now to have the honour to see him, which he could never yet do. And it appeared plainly to those that were about the King, that he was indeed much joyed with the News of Perkin's being on English ground, where he could have no retreat by Land; thinking now, that he should be cured of those privy Stitches, which he had long had about his Heart, and had sometimes broken his Sleeps in the midst of all his felicity. And, to set all mens hearts on fire, he did by all possible means let it appear, that those, who should now do him service to make an end of these troubles, should be no less accepted of him, than he that came upon the Eleventh Hour, and had the whole Wages of the Day. Therefore now (like the end of a Play) a great number came upon the Stage at once. He sent the Lord Chamberlain, and the Lord Brook, and Sir Rice ap Thomas, with expedite Forces to speed to Exceter, to the Rescue of the Town, and to spread the Fame of his own following in Person with a Royal Army. The Earl of Devonshire, and his Son, with the Caroes, and the Fulfords, and other principal Persons of Devonshire (uncalled from the Court, but hearing that the King's heart was so much bent upon this Service) made haste with Troops, that

they had raised, to be the first that should succour the City of Exceter, and prevent the King's Succours. The Duke of Buckingham likewise, with many brave Gentlemen, put themselves in Arms, not staying either the King's, or the Lord Chamberlain's coming on, but making a Body of Forces of themselves, the more to indear their merit, signifying to the King their readiness, and desiring to know his pleasure. So that according to the Proverb, In the coming down, every Saint did help.

Perkin, hearing this Thunder of Arms, and Preparations against him from so many Parts, raised his Siege, and marched to Taunton; beginning already to squint one eye upon the Crown, and another upon the Sanctuary: Though the Cornish-men were become, like Metal often fired and quenched, churlish, and that would sooner break than bow; swearing and vowing not to leave him, till the uttermost drop of their blood were spilt. He was at his rising from Exceter between six and seven thousand strong, many having come unto him, after he was set before Exceter, upon fame of so great an Enterprize, and to partake of the Spoil; though upon the raising of his Siege, some did slip away. When he was come near Taunton, he dissembled all fear, and seemed all the day to use diligence in preparing all things ready to fight. But about midnight, he fled with threescore Horse to Bewley in the New-Forest, where he and divers of his Company registred themselves Sanctuary-men, leaving his Cornish-men to the Four Winds; But yet thereby easing them of their Vow, and using his wonted Compassion, Not to be by when his Subjects blood should be spilt. The King, as soon as he heard of Perkin's Flight, sent presently five hundred Horse to pursue and apprehend him, before he should get either to the Sea, or to that same little Island, called a Sanctuary. But they came too late for the latter of these. Therefore all they could do, was to beset the Sanctuary, and to maintain a strong Watch about it, till the King's pleasure were further known. As for the rest of the Rebels, they (being destituted of their head) without stroke stricken, submitted themselves unto the King's Mercy. And the King, who commonly drew Blood (as Physicians do) rather to save life, than to spill it, and was never Cruel, when he was Secure; now he saw the danger was past, pardoned them all in the end,

except some few desperate persons which he reserved to be Executed, the better to set off his Mercy towards the rest. There were also sent with all speed some Horse to St. Michael's-Mount in Cornwal, where the Lady Catherine Gordon was left by her Husband, whom in all fortunes she entirely loved; adding the virtues of a Wife, to the virtues of her Sex. The King sent in the greater diligence, not knowing whether she might be with Child; whereby the business would not have ended in Perkin's person. When she was brought to the King, it was commonly said, that the King received her not only with Compassion, but with Affection; Pity giving more Impression to her excellent Beauty. Wherefore comforting her (to serve as well his Eye as his Fame) he sent her to his Queen, to remain with her; giving her very honourable Allowance for the suport of her Estate: which she enjoyed both during the King's life, and many years after. The name of the White-Rose (which had been given to her Husband's False-Title) was continued in common speech to her true Beauty.

The King went forward on his Journey, and made a joyful entrance into Exceter, where he gave the Citizens great commendations and thanks; and taking the Sword he wore, from his side, he gave it to the Mayor, and commanded it should be ever after carried before him. There also he caused to be executed some of the Ring-leaders of the Cornish-men, in sacrifice to the Citizens, whom they had put in fear, and trouble. At Exceter the King consulted with his Council, whether he should offer life to Perkin, if he would quit the Sanctuary, and voluntarily submit himself. The Council were divided in opinion. Some advised the King to take him out of Sanctuary per-force, and to put him to death, as in a case of Necessity, which in it self dispenseth with Consecrated Places and things. Wherein they doubted not also, but the King should find the Pope tractable to ratifie his Deed, either by Declaration, or (at least) by Indulgence. Others were of opinion (since all was now safe, and no further hurt could be done) that it was not worth the exposing of the King to new Scandal and Envy. A third sort fell upon the opinion that it was not possible for the King ever, either to satisfie the World well touching the Imposture, or to learn out the bottom of the Conspiracy, except by promise of Life and Pardon, and other fair

means, he should get Perkin into his hands. But they did all in their Preambles much bemoan the King's Case, with a kind of Indignation at his Fortune; That a Prince of his high Wisdom and Virtue, should have been so long, and so oft exercised and vexed with Idols. But the King said; that it was the Vexation of God Almighty himself, to be vexed with Idols, and therefore that that was not to trouble any of his Friends. And that for himself, he always despised them; but was grieved that they had put his People to such trouble and misery. But (in Concusion) he leaned to the third opinion, and so sent some to deal with Perkin. Who seeing himself Prisoner, and destitute of all hopes, having tryed Princes and People, Great and Small, and found all either false, faint or unfortunate, did gladly accept of the Condition. The King did also (while he was at Exceter) appoint the Lord Darcy, and others, Commissioners, for the fining of all such, as were of any value, or had any hand or partaking in the ayd or comfort of Perkin or the Cornish-men, either in the Field or in the Flight.

These Commissioners proceeded with such strictness and severity, as did much obscure the King's mercy in sparing of Blood, with the bleeding of so much Treasure. Perkin was brought unto the King's Court, but not to the King's presence; though the King (to satisfie his Curiosity) saw him sometimes out of a window, or in passage. He was in shew at liberty, but guarded with all care and watch that was possible, and willed to follow the King to London. But from his first appearance upon the Stage, in his new person of a Sycophant or Jugler, instead of his former person of a Prince, all men may think how he was exposed to the derision, not only of the Courtiers, but also of the Common-People who flocked about him as he went along; that one might know a-far-off, where the Owl was by the Flight of Birds. Some mocking, some wondering, some cursing, some prying and picking matter out of his Countenance and Gesture, to talk of. So that the false Honour and Respects which he had so long enjoyed, was plentifully repayed in Scorn and Contempt. As soon as he was come to London, the King gave also the City the solace of this May-Game. For he was conveyed leisurely on Horse-back (but not in any ignominious fashion) through Cheapside, and Cornwill, to the Tower; and from thence back again unto Westminster, with

the Churm of a thousand taunts and reproaches. But to amend the Show, there followed a little distance of Perkin, an inward Counsellor of his, one that had been SerjeantFarrier to the King. This Fellow when Perkin took Sanctuary, chose rather to take an Holy Habit than an Holy Place, and clad himself like an Hermit, and in that weed wandred about the Countrey, till he was discovered, and taken. But this Man was bound hand and foot upon the Horse, and came not back with Perkin, but was left at the Tower, and within few days after Executed. Soon after, now that Perkin could tell better what himself was, he was diligently examined; and after his Confession taken, an Extract was made of such parts of them as were thought fit to be divulged, which was Printed and dispersed abroad. Wherein the King did himself no Right. For as there was a laboured Tale of particulars, of Perkin's Father, and Mother, and Grandsire, and Grandmother, and Uncles, and Cousins, by Names and Sirnames, and from what places he travelled up and down; so there was little or nothing to purpose of any thing concerning his Designs, or any Practices that had been held with him; nor the Duchess of Burgundy her self (that all the World did take knowledge of, as the Person that had put Life and Being into the whole Business) so much as named or pointed at. So that men missing of that they looked for, looked about for they knew not what, and were in more doubt than before. But the King chose rather not to satisfie, than to kindle Coals. At that time also it did not appear by any new Examinations or Commitments, that any other Person of quality was discovered or appeached, though the King's closeness made that a DoubtDormant.

About this time, a great Fire in the night time suddenly began at the King's Palace of Sheyn, near unto the King's own Lodgings, whereby a great part of the building was consumed, with much costly Houshold-stuff; which gave the King occasion of Building from the ground that fine Pile of Richmond, which is now standing.

Somewhat before this time also, there fell out a memorable Accident. There was one Sebastian Gabato, a Venetian, dwelling in Bristow, a man seen and expert in Cosmography and Navigation. This man seeing the success, and

emulating perhaps the enterprize of Christopherus Columbus in that fortunate discovery towards the South-west, which had been by him made some six years before; conceited with himself, that Lands might likewise be discovered towards the North-west. And surely it may be he had more firm and pregnant Conjectures of it, than Columbus had of this at the first. For the two great Islands of the Old and New World, being (in the shape and making of them) broad towards the North, and pointed towards the South; it is likely, that the discovery first began where the Lands did nearest meet. And there had been before that time a discovery of some Lands, which they took to be Islands, and were indeed the Continent of America, towards the North-west. And it may be, that some Relation of this nature coming afterwards to the knowledge of Columbus, and by him suppressed, (desirous rather to make his Enterprize the Child of his Science and Fortune, than the Follower of a former Discovery) did give him better assurance that all was not Sea, from the West of Europe and Africk unto Asia, than either Seneca's Prophesie, or Plato's Antiquities, or the Nature of the Tides, and Land-winds, and the like, which were the Conjectures that were given out, whereupon he should have relyed. Though I am not ignorant, that it was likewise laid unto the casual and wind-beaten Discovery (a little before) of a Spanish Pilot, who dyed in the house of Columbus. But this Gabato bearing the King in hand, that he would find out an Island endued with rich Commodities, procured him to man and victual a Ship at Bristow, for the discovery of that Island; With whom ventured also three small Ships of London-Merchants, fraught with some gross and sleight Wares, fit for Commerce with barbarous people. He sayled (as he affirmed at his return, and made a Card thereof) very far Westwards, with a Quarter of the North, on the North-side of Tierra de Labrador, until he came to the Latitude of sixty seven Degrees and an half, finding the Seas still open. It is certain also, that the King's Fortune had a tender of that great Empire of the West-Indies. Neither was it a Refusal on the King's part, but a Delay by accident, that put by so great an Acquest. For Christopherus Columbus refused by the King of Portugal (who would not embrace at once both East and West) employed his Brother Bartholomaus Columbus unto King Henry, to negotiate

for his Discovery. And it so fortuned, that he was taken by Pirates at Sea, by which accidental impediment he was long ere he came to the King. So long, that before he had obtained a Capitulation with the King for his Brother; the Enterprize by him was atchieved, and so the West-Indies by Providence were then reserved for the Crown of Castilia. Yet this sharpened the King so, that not only in this Voyage, but again in the Sixteenth year of his Reign, and likewise in the Eighteenth thereof, he granted forth new Commissions, for the Discovery and investing of unknown Lands.

In this Fourteenth year also (by God's wonderful providence, that boweth things unto his will, and hangeth great Weights upon small Wires) there fell out a trifling and untoward Accident that drew on great and happy effects. During the Truce with Scotland, there were certain Scottish young Gentleman, that came into Norham Town, and there made merry with some of the English of the Town. And having little to do, went sometimes forth, and would stand looking upon the Castle. Some of the Garrison of the Castle, observing this their doing twice or thrice, and having not their minds purged of the late ill blood of Hostility, either suspected them, or quarrelled them for Spies. Whereupon they fell at ill Words, and from Words to Blows; so that many were wounded of either side, and the Scottish-men (being strangers in the Town) had the worst. In so much as some of them were slain, and the rest made haste home. The matter being complained on, and often debated before the Wardens of the Marches of both sides, and no good order taken, the King of Scotland took it to himself, and being much kindled, sent a Herald to the King to make Protestation, That if Reparation were not done, according to the Conditions of the Truce, his King did denounce War. The King (who had often tryed Fortune, and was inclined to Peace) made answer; That what had been done, was utterly against his will, and without his Privity. But if the Garrison-Souldiers had been in fault, he would see them punished, and the Truce in all points to be preserved. But this answer seemed to the Scottish King but a delay, to make the complaint breathe out with time; and therefore it did rather exaspetare him, than satisfie him. Bishop Fox, understanding from the King, that the Scottish King was still discontent and

impatient, being troubled that the occasion of breaking of the Truce should grow from his men, sent many humble and deprecatory Letters to the Scottish King to appease him. Whereupon King James, mollified by the Bishop's submiss and eloquent Letters, wrote back unto him; That though he were in part moved by his Letters, yet he should not be fully satisfied, except he spake with him; as well about the compounding of the present differences, as about other matters that might concern the good of both Kingdoms. The Bishop advising first with the King, took his Journey for Scotland. The meeting was at Metross, an Abbey of the Cestercians; where the King then abode. The King first roundly uttered unto the Bishop his offence conceived for the insolent Breach of Truce, by his men of Norham Castle. Whereunto Bishop Fox made such an humble and smooth answer, as it was like Oyl into the wound, whereby it began to heal. And this was done in the presence of the King and his Council. After, the King spake with the Bishop apart, and opened himself unto him, saying; That these temporary Truces and Peaces were soon made, and soon broken: But that he desired a straiter Amity with the King of England, discovering his mind; that if the King would give him in Marriage, the Lady Margaret, his eldest Daughter, That indeed might be a Knot indissoluble. That he knew well what Place and Authority the Bishop deservedly had with his Master. Therefore, if he would take the business to heart, and deal in it effectually, he doubted not but it would succeed well. The Bishop answered soberly, that he thought himself rather happy, than worthy, to be an instrument in such a matter; but would do his best endeavour. Wherefore the Bishop returning to the King, and giving account what had passed, and finding the King more than well disposed in it, gave the King advice; first to proceed to a Conclusion of Peace, and then to go on with the Treaty of Marriage, by degrees. Hereupon a Peace was concluded, which was published a little before Christmas in the Fourteenth year of the King's Reign to continue for both the Kings lives, and the overliver of them, and a year after. In this Peace there was an Article contained, that no English-man should enter into Scotland, and no Scottish-man into England, without Letters Commendatory from the Kings of either Nation. This at the first sight might seem a means to

continue a strangeness between the Nations; but it was done, to lock in the Borderers.

This year there was also born to the King a third Son, who was christned by the name of Edmund, and shortly after dyed. And much about the same time came news of the death of Charles the French King; For whom there were celebrated Solemn and Princely Obsequies.

It was not long, but Perkin (who was made of Quick-silver, which is hard to hold or imprison) began to stir. For deceiving his Keepers, he took him to his heels, and made speed to the Seacoasts. But presently all Corners were laid for him, and such diligent pursuit and search made, as he was fain to turn back, and get him to the house of Bethleem, called the Priory of Shyne, (which had the priviledge of a Sanctuary) and put himself into the hands of the Prior of that Monastery. The Prior was thought an Holy Man, and much reverenced in those days. He came to the King, and besought the King for Perkin's life only, leaving him otherwise to the Kings discretion. Many about the King were again more hot than ever, to have the King take him forth, and hang him. But the King (that had an high stomach, and could not hate any that he despised) bid, Take him forth, and set the Knave in the stocks. And so promising the Prior his life, he caused him to be brought forth. And within two or three days after, upon a fold, set up in the Palace-Court at Westminster, he was and set in the Stocks, for the whole day. And the next after, the like was done by him at the Cross in Cheapside in both places he read his Confession, of which we made before; and was from Cheapside conveyed and laid up the Tower. Notwithstanding all this, the King was (as partly touched before) grown to be such a Partner with , as no body could tell what Actions the one, and what other owned. For it was believed generally that Perkin was betrayed, and that this Escape was not without the King's privity, who had him all the time of his Flight in a Line; and that the King did this, to pick a Quarrel to him to put him to death, and to be rid of him at once. But this is not probable. For that the same Instruments who observed him in his Flight, might have kept him from getting into Sanctuary.

But it was ordained, that this Winding-Ivy of a Plantagenet, should kill the true Tree it self. For Perkin, after he had been a while in the Tower, began to insinuate himself into the favour and kindness of his Keepers, Servants to the Lieutenant of the Tower, Sir John Digby, being four in number; Strangways, Blewet, Astwood, and Long-Roger. These Varlets, with mountains of promises, he sought to corrupt, to obtain his Escape. But knowing well, that his own Fortunes were made so contemptible, as he could feed no man's Hopes (and by Hopes he must work, for Rewards he had none) he had contrived with himself a vast and tragical Plot, which was, to draw into his Company Edward Plantagenet Earl of Warwick, then Prisoner in the Tower; whom the weary life of a long Imprisonment, and the often and renewing Fears of being put to Death, had softned to take any impression of counsel for his Liberty. This young Prince he thought these Servants would look upon, though not upon himself. And therefore after that by some Message by one or two of them, he had tasted of the Earl's consent; it was agreed that these four should murder their Master the Lieutenant, secretly in the night, and make their best of such Money and portable Goods of his, as they should find ready at hand, and get the Keys of the Tower, and presently let forth Perkin and the Earl. But this Conspiracy was revealed in time, before it could be executed. And in this again the Opinion of the King's great Wisdom did surcharge him with a sinister Fame, that Perkin was but his Bait, to entrap the Earl of Warwick. And in the very instant while this Conspiracy was in working (as if that also had been the King's industry) it was fatal, that there should break forth a counterfeit Earl of Warwick, a Cordwainer's Son, whose name was Ralph Wilford; a young man, taught and set on by an Augustin Frier, called Patrick. They both from the parts of Suffolk, came forwards into Kent, where they did not only privily and underhand give out, that this Wilford was the true Earl of Warwick; but also the Frier finding some light Credence in the People, took the boldness in the Pulpit to declare as much, and to incite the People to come in to his ayd. Whereupon they were both presently , and the young fellow executed, and the Frier condemned perpetual Imprisonment. This also hapning so opportunely, to the danger to the King's Estate, from the Earl of

Warwick, and thereby to colour the King's severity that followed, together the madness of the Frier, so vainly and desperately to divulge a Treason, before it had gotten any manner of strength; and the saving of the Frier's life, which nevertheless was (indeed) but the priviledge of his Order; and the Pity in the common People (which if it run in a strong Stream, doth ever cast up Scandal and Envy) made it generally rather talked, than believed, that all was but the King's device. But howsoever it were, hereupon Perkin (that had offended against Grace now the third time) was at the last proceeded with, and by Commissioners of Oyer and Determiner, arraigned at Westminster, upon divers Treasons committed and perpetrated after his coming on land within this Kingdom (for so the Judges advised, for that he was a Poreiner) and condemned, and a few days after executed at Tyburn. Where he did again openly read his Confession, and take it upon his Death to be true. This was the end of this little Cockatrice of a King, that was able to destroy those that did not espy him first. It was one of the longest Plays of that kind, that hath been in memory; and might perhaps have had another end, if he had not met with a King both wise, stout and fortunate.

As for Perkin's three Counsellors, they had registred themselves Sanctuary-men when their Master did. And whether upon Pardon obtained, or continuance within the Priviledge, they came not to be proceeded with.

There was executed with Perkin the Mayor of Cork, and his Son, who had been principal Abettors of his Treasons. And soon after were likewise condemned eight other Persons, about the TowerConspiracy, whereof four were the Lieutenant's men. But of those eight but two were executed. And immediately after was arraigned before the Earl of Oxford (then for the time High-Steward of England) the poor Prince the Earl of Warwick; not for the Attempt to escape simply (for that was not acted; And besides, the Imprisonment not being for Treason, the Escape by Law could not be Treason) but for conspiring with Perkin to raise sedition, and to destroy the King. And the Earl confessing the Indictment had Judgment, and was shortly after beheaded on Tower-hill.

This was also the end not only of this Noble and Commiserable person Edward the Earl of Warwick, eldest Son to the Duke of Clarence, but likewise of the Line-Male of the Plantagenets, which had flourished in great Royalty and Renown, from the time of the famous King of England King Henry the Second. Howbeit it was a Race often dipped in their own Blood. It hath remained since only transplanted into other Names, as well of the Imperial-Line, as of other Noble Houses. But it was neither guilt of Crime, nor reason of Estate, that could quench the Envy that was upon the King for this Execution. So that he thought good to export it out of the Land, and to lay it upon his new Ferdinando King of Spain. For these two Kings understanding one another at half a word, so it was, that there were Letters shewed out of Spain, whereby in the passages concerning the Treaty of the Marriage, Ferdinando had written to the King in plain terms, that he saw no assurance of his Succession, as long as the Earl of Warwick lived; and that he was loth to send his Daughter to Troubles and Dangers. But hereby, as the King did in some part remove the Envy from himself; so he did not observe, that he did withal bring a kind of Malediction and Infausting upon the Marriage, as an ill Prognostick. Which in event so far proved true, as both Prince Arthur enjoyed a very small time after the Marriage, and the Lady Katherine, her self (a sad and a religious woman) long after, when King Henry the Eighth his resolution of a Divorce from her was first made known to her, used some words; That she had not offended: but it was a Judgment of God, for that her former Marriage was made in blood; meaning that of the Earl of Warwick.

This Fifteenth year of the King there was a great Plague, both in London, and in divers parts of the Kingdom. Wherefore the King after often change of Places (whether to avoid the danger of the Sickness, or to give occasion of an Enterview with the ArchDuke, or both) sayled over with his Queen to Calice. Upon his coming thither, the ArchDuke sent an honourable Ambassage unto him, as well to welcom him into those parts, as to let him know, that (if it pleased him) he would come and do him reverence. But it was said withal; That the King might be pleased to appoint some place, that were out of any Walled Town or Fortress, for that he had denied the same upon like occasion to the

French King. And though he said, he made a great difference between the two Kings, yet he would be loth to give a President, that might make it after to be expected at his hands, by another whom he trusted less. The King accepted of the Courtesie, and admitted of his Excuse, and appointed the place to be at St. Peter's Church without Calice. But withal he did visit the ArchDuke with Ambassadors sent from himself, which were the Lord SaintJohn, and the Secretary; unto whom the ArchDuke did the honour, as (going to Mass at St. Omers) to set the Lord SaintJohn on his right hand, and the Secretary on his left, and so to ride between them to Church. The day appointed for the Enterview, the King went on Horse-back some distance from St. Peter's Church, to receive the ArchDuke. And upon their approaching, the ArchDuke made hast to light, and offered to hold the King's Stirrop at his alighting; which the King would not permit, but descending from Horse-back, they embraced with great affection, and withdrawing into the Church to a place prepared, they had long Conference, not only upon the Confirmation of former Treaties, and the of Commerce, but upon Cross Marriages, to be had between the Duke of York the King's second Son, and the ArchDuke's Daughter, And again between Charles the ArchDukes Son and Heir, and Mary the King's second Daughter. But these Blossoms of unripe Marriages, were but friendly wishes, and the Airs of loving Entertainment; though one of them came afterwards to Conclusion in Treaty, though not in Effect. But during the time that the two Princes conversed and commoned together in the Suburbs of Calice, the Demonstrations on both sides were passing hearty and affectionate, especially on the part of the ArchDuke. Who (besides that he was a Prince of an excellent good nature) being conscious to himself, how drily the King had been used by his Council in the matter of Perkin, did strive by all means to recover it in the King's affection. And having also his ears continually beaten with the Counsels of his Father and Fatherin-law, who (in respect of their jealous hatred against the French King) did always advise the ArchDuke to anchor himself upon the Amity of King Henry of England; was glad upon this occasion, to put in ure and practice their precepts, calling the King Patron, and Father, and Protector, (these very words the King

repeats; when he certified of the loving behaviour of the ArchDuke to the City) and what else he could devise, to express his love and observance to the King. There came also to the King the Governour of Picardy, and the Bailiff of Amiens, sent from Lewis the French King to do him honour, and to give him knowledge of his victory and winning of the Duchy of Millan. It seemeth the King was well pleased with the honours he received from those parts, while he was at Calice. For he did himself certifie all the News and Occurrents of them in every particular, from Calice, to the Mayor and Aldermen of London, which (no doubt) made no small talk in the City. For the King, though he could not entertain the good will of the Citizens, as Edward the Fourth did; yet by affability and other Princely Graces, did ever make very much of them, and apply himself to them.

This year also dyed John Morton, Archbishop of Canterbury, Chancellor of England, and Cardinal. He was a wise man, and an eloquent, but in his nature harsh, and haughty; much accepted by the King, but envied by the Nobility, and hated of the People. Neither was his name left out of Perkin's Proclamation for any good will, but they would not bring him in amongst the King's Casting-Counters, because he had the Image and Superscription upon him of the Pope, in his Honour of Cardinal. He wan the King with Secrecy and Diligence, but chiefly because he was his old Servant in his less Fortunes: And also for that (in his affections) he was not without an inveterate malice against the House of York, under whom he had been in trouble. He was willing also to take Envy from the King, more than the King was willing to put upon him. For the King cared not for Subterfuges, but would stand Envy, and appear in any thing that was to his mind; which made Envy still grow upon him more universal, but less daring. But in the matter of Exactions, time did after shew, that the Bishop in feeding the King's humour, did rather temper it. He had been by Richard the Third committed (as in custody) to the Duke of Buckingham, whom he did secretly incite to revolt from King Richard. But after the Duke was engaged, and thought the Bishop should have been his chief Pilot in the Tempest, the Bishop was gotten into the Cock-boat, and fled over beyond Seas. But whatsoever else

was in the Man, he deserveth a most happy Memory, in that he was the principal Mean of joyning the two Roses. He dyed of great years, but of strong health and Powers.

The next year, which was the Sixteenth year of the King, and the year of our Lord One thousand five hundred, was the year of Jubile at Rome. But Pope Alexander, to save the Hazard and Charges of mens Journeys to Rome, thought good to make over those Graces by exchange, to such as would pay a convenient Rate, seeing they could not come to fetch them. For which purpose was sent into England Jasper Pons, a Spaniard, the Pope's Commissioner, better chosen than were the Commissioners of Pope Leo, afterwards employed for Germany; for he carried the Business with great wisdom, and semblance of Holiness. In so much as he levied great summs of Money within this Land to the Pope's use, with little or no Scandal. It was thought the King shared in the Money. But it appeareth by a Letter which Cardinal Adrian, the King's Pensioner, wrote to the King from Rome some few years after, that this was not so. For this Cardinal, being to perswade Pope Julius on the King's behalf, to expedite the Bull of Dispensation for the Marriage between Prince Henry and the Lady Katherine, finding the Pope difficil in granting thereof, doth use it as a principal Argument concerning the King's merit toward that See, that he had touched none of those Deniers, which had been levied by Pons in England. But that it might the better appear (for the satisfaction of the Common people) that this was Consecrate Money, the same Nuncio brought unto the King a Brief from the Pope, wherein the King was exhorted and summoned to come in Person against the Turk. For that the Pope (out of the care of an Universal Father) seeing almost under his eyes the Successes and Progresses of that great Enemy of the Faith, had had in the Conclave, and with the Assistance of the Ambassadors of forein Princes, divers Consultations about an Holy War, and a General Expedition of Christian Princes against the Turk. Wherein it was agreed, and thought fit, that the Hungarians, Polonians, and Bobemians should make a War upon Thracia; the French and Spaniards upon Gracia; and that the Pope (willing to sacrifice himself in so good a Cause) in Person and in Company of the King of England, the Venetians, and

such other States as were great in maritim Power, would sail with a puissant Navy through the Mediterrane unto Constantinople. And that to this end, his Holiness had sent Nuncio's to all Christian Princes; As well for a Cessation of all Quarrels and Differences amongst themselves, as for speedy Preparations and Contributions of Forces and Treasure for this Sacred Enterprize.

To this the King, (who understood well the Court of Rome) made an Answer rather Solemn, than Serious: Signifying;

THat no Prince on Earth should be more forward and obedient, both by his Person, and by all his possible Forces, and Fortunes, to enter into this Sacred War, than himself. But that the distance of Place was such, as no Forces that he should raise for the Seas, could be levied or prepared, but with double the charge, and double the time (at the least) that they might be from the other Princes, that had their Territories nearer adjoyning. Besides, that neither the manner of his Ships (having no Galleys) nor the Experience of his Pilots and Mariners could be so apt for those Seas, as theirs. And therefore that his Holiness might do well, to move one of those other Kings, who lay fitter for the purpose, to accompany him by Sea. Whereby both all things would be sooner put in readiness, and with less Charge, and the Emulation and Division of Command, which might grow between those Kings of France and Spain, if they should both joyn in the War by Land upon Grecia, might be wisely avoided. And that for his part, he would not be wanting in Ayds and Contribution. Yet notwithstanding, if both these Kings should refuse, rather than his Holiness should go alone, he would wait upon him, as soon as he could be ready. Always provided, that he might first see all Differences of the Christian Princes amongst themselves, fully laid down and appeased (as for his own part he was in none.) And that he might have some good Towns upon the Coast in Italy put into his hands, for the Retrait and safeguard of his Men.

With this Answer Jasper Pons returned, nothing at all discontented. And yet this Declaration of the King (as superficial as it was) gave him that Reputation abroad, as he was not long after elected by the Knights of the Rhodes, Protector

of their Order; All things multiplying to Honour in a Prince, that had gotten such high Estimation for his Wisdom and Sufficiency.

There were these two last years some proceedings against Hereticks, which was rare in this King's Reign, and rather by Penances, than by Fire. The King had (though he were no good School-man) the Honour to convert one of them by Dispute at Canterbury.

This year also, though the King were no more haunted with Sprites, for that by the sprinkling, partly of Blood, and partly of Water, he had chased them away; yet nevertheless he had certain Apparitions that troubled him, still shewing themselves from one Region, which was the House of-York. It came so to pass, that the Earl of Suffolk, Son to Elizabeth, eldest Sister to King Edward the Fourth, by John Duke of Suffolk, her second Husband, and Brother to John Earl of Lincoln, that was slain at Stockfield, being of an hasty and Cholerick disposition, had killed a man in his fury; whereupon the King gave him his Pardon. But either willing to leave a Cloud upon him, or the better to make him feel his Grace, produced him openly to plead his Pardon. This wrought in the Earl, as in a haughty stomack it useth to do; for the Ignominy printed deeper than the Grace. Wherefore he being discontent, fled secretly into Flanders, unto his Aunt the Duchess of Burgundy. The King startled at it. But being taught by Troubles, to use fair and timely Remedies, wrought so with him by Messages, (the Lady Margaret also growing by often failing in her Alchymy, weary of her Experiments, and partly being a little sweetned, for that the King had not touched her name in the Confession of Perkin) that he came over again upon good terms, and was reconciled to the King.

In the beginning of the next year, being the Seventeenth of the King, the Lady Katherine fourth Daughter of Ferdinando and Isabella, King and Queen of Spain, arrived in England, at Plimouth, the second of October, and was married to Prince Arthur in Pauls the fourteenth of November following. The Prince being then about fifteen years of age, and the Lady about eighteen. The manner of her Receiving, the manner of her Entry into London, and the Celebrity of the Marriage were performed with great and true Magnificence, in regard of Cost,

Shew, and Order. The chief man that took the care was Bishop Fox; who was not only a grave Counsellor for War or Peace, but also a good Surveyor of Works, and a good Master of Ceremonies, and any thing else that was fit for the Active part, belonging to the service of Court, or State of a great King. This Marriage was almost seven years in Treaty; which was in part caused by the tender years of the Marriage-couple, especially of the Prince. But the true reason was, that these two Princes, being Princes of great Policy and profound Judgment, stood a great time looking one upon another's Fortunes, how they would go, knowing well that in the mean time, the very Treaty it self gave abroad in the World a Reputation of a strait Conjunction and Amity between them; which served on both sides to many purposes, that their several Affairs required, and yet they continued still free. But in the end, when the Fortunes of both the Princes did grow every day more and more prosperous and assured, and that looking all about them they saw no better Conditions, they shut it up.

The Marriage-Money the Princess brought (which was turned over to the King by Act of Renunciation) was two hundred thousand Ducats. Whereof one hundred thousand were payable ten days after the Solemnization, and the other hundred thousand at two payments Annual; but part of it to be in Jewels and Plate, and a due course set down to have them justly and indifferently prized. The Joynture or Advancement of the Lady, was the third part of the Principality of Wales, and of the Dukedom of Cornwal, and of the Earldom of Chester, to be after set forth in severalty. And in case she came to be Queen of England, her Advancement was left indefinite, but thus; That it should be as great, as ever any former Queen of England had.

In all the Devices and Conceits of the Triumphs of this Marriage, there was a great deal of Astronomy. The Lady being resembled to Hesperus, and the Prince to Arcturus, and the old King Alphonsus (that was the greatest Astronomer of Kings, and was Ancestor to the Lady) was brought in to be the Fortune-celler of the Match. And whosoever had those Toys in Compiling, they were not altogether Pedantical. But you may be sure that King Arthur, the Briton, and the descent of the Lady Katherine from the House of Lancaster, was in no wise

forgotten. But (as it should seem) it is not good to fetch Fortunes from the Stars. For this young Prince (that drew upon him at that time, not only the Hopes and Affections of his Countrey, but the Eyes and Expectation of Foreiners) after a few Months, in the beginning of April, deceased at Ludlow-Castle, where he was sent to keep his Resiance and Court, as Prince of Wales. Of this Prince, in respect he dyed so young, and by reason of his Father's manner of Education, that did cast no great Lustre upon his Children, there is little particular Memory. Only thus much remaineth, that he was very studious and learned, beyond his years, and beyond the Custom of great Princes.

There was a doubt ripped up in the times following, when the Divorce of King Henry the Eighth from the Lady Katherine did so much busie the world, whether Arthur was bedded with his Lady or no, whereby that matter in fact (of Carnal Knowledge) might be part of the Case. And it is true, that the Lady her self denyed it, or at least her Council stood upon it, and would not blanch that Advantage, although the plenitude of the Pope's power of Dispensing was the main Question. And this Doubt was kept long open, in respect of the two Queens that succeeded, Mary and Elizabeth, whose Legitimations were incompatible one with another, though their Succession was setled by Act of Parliament. And the Times that favoured Queen Maries Legitimation, would have it believed, that there was no Carnal Knowledge between Arthur and Katherine. Not that they would seem to derogate from the Pope's absolute power, to dispense even in that Case; but only in point of Honour, and to make the Case more favourable and smooth. And the Times that favoured Queen Elizabeths Legitimation (which were the longer, and the later) maintained the contrary. So much there remaineth in Memory, that it was half a years time between the Creation of Henry Prince of Wales, and Prince Arthur's death; which was construed to be, for to expect a full time, whereby it might appear, whether the Lady Katherine were with Child by Prince Arthur, or no. Again, the Lady her self procured a Bull, for the better Corroboration of the Marriage, with a Clause of (vel forsan cognitam) which was not in the first Bull. There was given in Evidence also, when the cause of the Divorce was handled, a pleasant passage, which was; That in a Morning

Prince Arthur, upon his up-rising from Bed with her, called for drink, which he was not accustomed to do, and finding the Gentleman of his Chamber that brought him the drink to smile at it and to note it, he said merrily to him, That he had been in the midst of Spain, which was an hot Region, and his Journey had made him dry, and that if the other had been in so hot a Clime, he would have been dryer than he. Besides, the Prince was upon the point of Sixteen years of Age when he dyed, and forward, and able in Body.

The February following, Henry Duke of York was created Prince of Wales, and Earl of Chester and Flint. For the Dukedom of Cornwal devolved to him by Statute. The King also being fasthanded, and loth to part with a second Dowry, but chiefly being affectionate both by his Nature, and out of Politick Considerations to continue the Alliance with Spain, prevailed with the Prince (though not without some Reluctation, such as could be in those years, for he was not twelve years of Age) to be contracted with the Princess Katherine. The secret Providence of God ordaining that Marriage, to be the Occasion of great Events and Changes.

The same year were the Espousals of James King of Scotland, with the Lady Margaret, the King's eldest Daughter, which was done by Proxy, and published at Paul's Cross, the five and twentieth of January, and Te Deum solemnly sung. But certain it is, that the Joy of the City thereupon shewed, by Ringing of Bells, and Bon-fires, and such other Incense of the People, was more than could be expected, in a Case of so great and fresh Enmity between the Nations; especially in London, which was far enough off from feeling any of the former calamities of the War. And therefore might be truly attributed to a Secret Instinct and Inspiring (which many times runneth not only in the Hearts of Princes, but in the Pulse and Veins of People) touching the happiness thereby to ensue in time to come. This Marriage was in August following consummate at Edenburgh. The King bringing his Daughter as far as Colly-Weston on the way, and then consigning her to the Attendance of the Earl of Northumberland; who with a great Troop of Lords and Ladies of Honour, brought her into Scotland, to the King her Husband.

This Marriage had been in Treaty by the space of almost three years, from the time that the King of Scotland did first open his mind to Bishop Fox. The Summ given in Marriage by the King, was ten thousand Pounds. And the Joynture and Advancement assured by the King of Scotland, was two thousand Pounds a year, after King James his Death, and one thousand Pounds a year in present, for the Ladys Allowance or Maintenance. This to be set forth in Lands, of the best and most certain Revenue. During the Treaty, it is reported, that the King remitted the matter to his Council; And that some of the Table in the Freedom of Counsellors (the King being present) did put the Case; that if God should take the King's two Sons without Issue, that then the Kingdom of England would fall to the King of Scotland, which might prejudice the Monarchy of England. Whereunto the King himself replied; That if that should be, Scotland would be but an Accession to England, and not England to Scotland, for that the greater would draw the less: And that it was a safer Union for England, than that of France. This passed as an Oracle, and silenced those that moved the Question.

The same year was fatal, as well for Deaths, as Marriages, and that with equal temper. For the Joys and Feasts of the two Marriages, were compensed with the Mournings, and Funerals of Prince Arthur (of whom we have spoken) and of Queen Elizabeth, who dyed in Child-bed in the Tower, and the Child lived not long after. There dyed also that year Sir Reginold Bray, who was noted to have had with the King the greatest Freedom of any Counsellor; but it was but a Freedom, the better to set off Flattery. Yet he bare more than his just part of Envy, for the Exactions.

At this time the King's Estate was very prosperous, secured by the Amity of Scotland, strengthned by that of Spain, cherished by that of Burgundy, all Domestick Troubles quenched, and all Noise of War (like a Thunder a-far-off) going upon Italy. Wherefore Nuture, which many times is happily contained, and refrained by some Bands of Fortune, began to take place in the King; carrying (as with a strong Tide) his Affections and Thoughts unto the gathering and heaping up of Treasure. And as Kings do more easily find Instruments for their Will and Humour, than for their Service and Honour; He had gotten for his

purpose, or beyond his purpose, two Instruments, Empson and Dudley, (whom the people esteemed as his Horse-Leeches and Shearers) bold men, and careless of Fame, and that took Toll of their Master's Grist. Dudley was of a good Family, Eloquent, and one that could put Hateful Business into good Language. But Empson, that was the Son of a Sieve-maker, triumphed always upon the Deed done, putting off all other respects whatsoever. These two Persons being Lawyers in Science, and Privy Counsellors in Authority (as the corruption of the best things is the worst) turned Law and Justice into Wormwood and Rapine. For first, their manner was to cause divers Subjects to be indicted of sundry Crimes, and so far forth to proceed in form of Law; But when the Bills were found, then presently to commit them. And nevertheless not to produce them to any reasonable time to their Answer, but to suffer them to languish long in Prison; and by sundry artificial Devices and Terrours, to extort from them great Fines and Ransoms, which they termed Compositions and Mitigations.

Neither did they (towards the end) observe so much as the Halfface of Justice, in proceeding by Indictment; but sent forth their Precepts to attach men, and convent them before themselves and some others, at their private Houses, in a Court of Commission, and there used to shuffle up a Summary Proceeding, by Examination, without tryal of Jury; assuming to themselves there, to deal both in Pleas of the Crown, and Controversies Civil.

Then did they also use to enthral and charge the Subjects Lands with Tenures in Capite, by finding False Offices, and thereby to work upon them for Wardships, Liveries, Primier Seisins, and Alienations, (being the fruits of those Tenures) refusing upon divers Pretexts and Delays, to admit men to traverse those False Offices, according to the Law. Nay, the King's Wards after they had accomplished their full Age, could not be suffered to have Livery of their Lands, without paying excessive Fines, far exceeding all reasonable Rates. They did also vex men with Informations of Intrusion upon scarce colourable Titles.

When men were Out-lawed in Personal Actions they would not permit them to purchase their Charters of Pardon, except they paid great and intolerable, summs; standing upon the strict Point of Law, which upon Out-lawries giveth

Forfeiture of Goods. Nay, contrary to all Law and Colour, they maintained, the King ought to have the half of mens Lands and Rents, during the space of full two years, for a Pain in Case of Out-lawry. They would also ruffle with Jurors, and enforce them to find as they would direct, and (if they did not) Convent them, Imprison them, and Fine them.

These and many other Courses, fitter to be buried than repeated, they had of Preying upon the People; both like Tame Hawks for their Master, and like Wild Hawks for themselves; in so much as they grew to great Riches and Substance. But their principal working was upon Penal Laws, wherein they spared none, great nor small; nor considered whether the Law were possible, or impossible, in Use or Obsolete. But raked over all old and new Statutes, though many of them were made with intention rather of Terrour, than of Rigour; having ever a Rabble of Promoters, Questmongers, and leading Jurors at their Command, so as they could have any thing found either for Fact, or Valuation.

There remaineth to this day a Report, that the King was on a time entertained by the Earl of Oxford (that was his principal Servant, both for War and Peace) nobly and sumptuously, at his Castle at Henningham. And at the King's going away, the Earl's Servants stood (in a seemly manner) in their Livery-Coats, with Cognisances, ranged on both sides, and made the King a . The King called the Earl to him, and said; My Lord, I have heard much of your Hospitality, but I see it is greater than the speech. These handsom Gentlemen and Yeomen, which I see on both sides of me, are sure your Menial Servants. The Earl smiled, and said, It may please your Grace, that were not for mine ease. They are most of them my Retainers, they are come to do me service at such a time as this, and chiefly to see your Grace. The King started a little, and said; By my faith (my Lord) I thank you for my good Cheer, but I may not endure to have my Laws broken in my sight. My Attorney must speak with you. And it is part of the Report, that the Earl compounded for no less than fifteen thousand Marks. And to shew further the Kings extreme Diligence; I do remember to have seen long since a Book of Accompt of Empson's, that had the King's hand almost to every

Leaf, by way of Signing, and was in some places Postilled in the Margin, with the King's hand likewise, where was this Remembrance:

Item, Received of such a one, five Marks for the Pardon to be procured; and if the Pardon do not pass, the Money to be re-paid, except the party be some other-ways satisfied.

And over against this Memorandum (of the King's own hand) Otherwise satisfied.

Which I do the rather mention, because it shews in the King a Nearness, but yet with a kind of Justness. So these little Sands and Grains of Gold and Silver (as it seemeth) helped not a little to make up the great Heap and Bank.

But mean while (to keep the King awake) the Earl of Suffolk having been too gay at Prince Arthur's Marriage, and sunk himself deep in Debt, had yet once more a mind to be a Knight-Errant; and to seek Adventures in Forein parts. And taking his Brother with him, fled again into Flanders. That (no doubt) which gave him Confidence, was the great Murmur of the People against the King's Government. And being a Man of a light and rash Spirit, he thought every Vapour would be a Tempest. Neither wanted he some Party within the Kingdom. For the Murmur of People awakes the Discontents of Nobles; and again, that calleth up commonly some Head of Sedition. The King resorting to his wonted and tryed Arts, caused Sir Robert Curson, Captain of the Castle at Hammes (being at that time beyond Sea, and therefore less likely to be wrought upon by the King) to flie from his Charge, and to feign himself a servant of the Earl's. This Knight, having insinuated himself into the Secrets of the Earl, and finding by him upon whom chiefly he had either Hope or Hold, advertised the King thereof in great secrecy. But nevertheless maintained his own Credit and inward trust with the Earl. Upon whose Advertisements, the King attached William Courtney, Earl of Devonshire, his Brother-in-Law, married to the Lady Katherine, Daughter to King Edward the Fourth; William de la Pole, Brother to the Earl of Suffolk; Sir James Tirrel, and Sir John Windham, and some other meaner Persons, and committed them to Custody. George, Lord Abergaveny, and Sir Thomas Green, were at the same time apprehended; but as upon less

Suspition, so in a freer Restraint, and were soon after delivered. The Earl of Devonshire, being interessed in the blood of York, that was rather Feared than Nocent; yet as One, that might be the Object of others Plots and Designs, remained Prisoner in the Tower, during the King's life. William de la Pole, was also long restrained, though not so straitly. But for Sir James Tirrel (against whom the Blood of the Innocent Princes, Edward the Fifth, and his Brother did still cry from under the Altar) and Sir John Windham, and the other meaner ones, they were attainted and executed; the two Knights beheaded. Nevertheless, to confirm the Credit of Curson (who belike had not yet done all his Feats of Activity) there was published at Paul's Cross, about the time of the said Executions, the Pope's Bull of Excommunication and Curse, against the Earl of Suffolk, and Sir Robert Curson, and some others by name, and likewise in general against all the Abettors of the said Earl. Wherein it must be confessed, that Heaven was made too much to bow to Earth, and Religion to Policy. But soon after, Curson (when he saw time) returned into England, and withal into wonted Favour with the King, but worse Fame with the People. Upon whose return the Earl was much dismayed, and seeing himself destitute of hopes (the Lady Margaret also by tract of Time, and bad Success, being now becom cool in those attempts) after some wandering in France, and Germany, and certain little Projects, no better than Squibs of an Exiled man, being tired out, retired again into the Protection of the ArchDuke Philip in Flanders, who by the death of Isabella was at that time King of Castile, in the right of Joan his Wife.

This year (being the Nineteenth of his Reign) the King called his Parliament. Wherein a man may easily guess, how absolute the King took himself to be with his Parliament, when Dudley that was so hateful, was made Speaker of the House of Commons. In this Parliament, there were not made any Statutes memorable, touching publick Government. But those that were, had still the Stamp of the King's Wisdom and Policy.

There was a Statute made for the disannulling of all Patents of Lease, or Grant, to such as came not upon lawful Summons, to serve the King in his Wars, against the Enemies or Rebels, or that should depart without the King's licence;

With an exception of certain Persons of the Long-robe. Providing nevertheless, That they should have the King's Wages, from their House, till their return home again. There had been the like made before for Offices, and by this Statute it was extended to Lands. But a man may easily see by many Statutes made in this King's time, that the King thought it safest, to assist Martial Law by Law of Parliament.

Another Statute was made, prohibiting the bringing in of Manufactures of Silk wrought by it self, or mixt with any other Thred. But it was not of Stuffs of whole piece (for that the Realm had of them no Manufacture in use at that time) but of Knit-Silk, or Texture of Silk; as Ribands, Laces, Cawls, Points, and Girdles, &c. which the people of England could then well skill to make. This Law pointed at a true Principle; That where forein materials are but Superfluities, forein Manufactures should be prohibited. For that will either banish the Superfluity, or gain the Manufacture.

There was a Law also of Resumption of Patents of Gaols, and the Reannexing of them to the Sherifwicks; Priviledged Officers being no less an Interruption of Justice, than Priviledged Places.

There was likewise a Law to restrain the By-laws or Ordinances of Corporations, which many times were against the Prerogative of the King, the Common-law of the Realm, and the Liberty of the Subject, being Fraternities in Evil. It was therefore Provided, that they should not be put in Execution, without the Allowance of the Chancellor, Treasurer, and the two Chief-Justices, or three of them, or of the two Justices of Circuit where the Corporation was.

Another Law was (in effect) to bring in the Silver of the Realm to the Mint, in making all clipped, minished, or impaired Coins of Silver, not to be currant in payments, without giving any Remedy of weight, but with an exception only of a reasonable wearing, which was as nothing in respect of the incertainty; and so (upon the matter) to set the Mint on work, and give way to New Coins of Silver, which should be then minted.

There likewise was a long Statute against Vagabonds, wherein two things may be noted; The one, the Dislike the Parliament had of Gaoling of them, as

that which was chargeable, pesterous, and of no open Example. The other, that in the Statutes of this King's time, (for this of the Nineteenth year is not the only Statute of that kind) there are ever coupled, the punishment of Vagabonds, and the forbidding of Dice, and Cards, and unlawful Games unto Servants and mean people, and the putting down and suppressing of Ale-houses, as Strings of one Root together, and as if the One were unprofitable, without the Other.

As for Riot and Retainers, there passed scarce any Parliament in this time without a Law against them, the King ever having an Eye to Might, and Multitude.

There was granted also that Parliament a Subsidy, both for the Temporalty and the Clergy. And yet nevertheless, ere the year expired, there went out Commissions for a general Benevolence, though there were no Wars, no Fears. The same year the City gave five thousand Marks, for Confirmation of their Liberties; A thing fitter for the Beginnings of King's Reigns, than the latter Ends. Neither was it a small matter, that the Mint gained upon the late Statute, by the Recoinage of Groats, and Half-Groats, now Twelve-pences and Sixpences. As for Empson and Dudley's Mills, they did grind more than ever. So that it was a strange thing, to see what Golden Showrs poured down upon the King's Treasury at once. The last payments of the Marriage-Money from Spain; The Subsidy; The Benevolence; The Recoinage; The Redemption of the Cities Liberties; The Casualties. And this is the more to be marvelled at, because the King had then no Occasions at all of Wars or Troubles. He had now but one Son and one Daughter unbestowed. He was Wise; He was of an High Mind; He needed not to make Riches his Glory. He did excel in so many things else; save that certainly Avarice doth ever find in it self matter of Ambition. Belike he thought to leave his Son such a Kingdom, and such a Mass of Treasure; as he might choose his Greatness where he would.

This year was also kept the Serjeants , which was the second Call in this Kings Days.

About this time Isabella, Queen of Castile, deceased; a right Noble Lady, and an Honour to her Sex, and Times, and the Corner-stone of the Greatness of

Spain, that hath followed. This Accident the King took not for News at large, but thought it had a great Relation to his own Affairs; especially in two points: The one for Example; the other for Consequence. First, he conceived that the Case of Ferdinando of Arragon, after the death of Queen Isabella, was his own Case, after the death of his own Queen: and the Case of Joan the Heir unto Castile, was the Case of his own Son Prince Henry. For if both of the Kings had their Kingdoms in the right of their Wives, they descended to the Heirs, and did not accrew to the Husbands. And although his own Case had both Steel and Parchment, more than the other (that is to say, a Conquest in the Field, and an Act of Parliament) yet, notwithstanding, that Natural Title of Descent in Blood, did (in the imagination even of a wise man) breed a Doubt, that the other two were not safe nor sufficient. Wherefore he was wonderful diligent to enquire and observe what became of the King of Arragon, in holding and continuing the Kingdom of Castile. And whether he did hold it in his own Right, or as Administrator to his Daughter; and whether he were like to hold it in Fast, or to be put out by his Son-in-Law. Secondly, he did revolve in his mind, that the State of Christendom might by this late Accident have a turn. For whereas before-time himself, with the Conjunction of Arragon and Castile (which then was one) and the Amity of Maximilian and Philip his Son the ArchDuke, was far too strong a Party for France; he began to fear, that now the French King (who had great Interest in the Affections of Philip the young King of Castile) and Philip himself, now King of Castile, (who was in ill terms with his Fatherin-Law about the present Government of Castile.) And thirdly Maximilian, Philip's Father (who was ever variable, and upon whom the surest Aim that could be taken, was that he would not be long, as he had been last before) would, all three being potent Princes, enter into some strait League and Confederation amongst themselves. Whereby though he should not be endangered, yet he should be left to the poor Amity of Arragon. And whereas he had been heretofore a kind of Arbiter of Europe, he should now go less, and be over-topped by so great a Conjunction. He had also (as it seems) an inclination to marry, and bethought himself of some fit Conditions abroad. And amongst others he had heard of the

Beauty and virtuous Behaviour of the young Queen of Naples, the Widow of Ferdinando the younger, being then of Matronal years of seven and twenty. By whose Marriage he thought that the Kingdom of Naples (having been a Goal for a time, between the King of Arragon, and the French King, and being but newly setled) might in some part be deposited in his hands, who was so able to keep the Stakes. Therefore he sent in Ambassage or Message three confident Persons; Francis Marsin, James Braybrook, and John Stile, upon two several Inquisitions rather than Negotiations. The One, touching the Person and Condition of the young Queen of Naples; the Other, touching all particulars of Estate, that concerned the Fortunes and Intentions of Ferdinando. And because they may observe best, who themselves are observed least, he sent them under Colourable Pretexts; giving them Letters of Kindness and Compliment from Katharine the Princess, to her Aunt, and Niece, the Old and Young Queen of Naples, and delivering to them also a Book of new Articles of Peace; which notwithstanding it had been delivered unto Doctor De Putbla, the Leigier Ambassador of Spain here in England, to be sent, yet for that the King had been long without hearing from Spain, he thought good those Messengers, when they had been with the two Queens, should likewise pass on to the Court of Ferdinando, and take a Copy of the Book with them. The Instructions touching the Queen of Naples were so curious and exquisite, being as Articles whereby to direct a Survey, or a Particular of her Person, for Complexion, Favour, Feature, Stature, Health, Age, Customs, Behaviour, Conditions, and Estate, as if the King had been young, a man would have judged him to be Amorous; but being ancient, it ought to be interpreted, that sure he was very Chast, for that he meant to find all things in one Woman, and so to settle his Affections, without ranging. But in this March he was soon cooled, when he heard from his Ambassadors, that this young Queen had had a goodly Joynture in the Realm of Naples, well answered during the time of her Uncle Frederick, yea, and during the time of Lewis the French King, in whose Division her Revenue fell; but since the time that the Kingdom was in Ferdinando's hands, all was assigned to the Army, and Garrisons there, and she received only a Pension or Exhibition out of his Coffers.

The other part of the Inquiry had a grave and diligent Return, informing the King at full of the present State of King Ferdinando. By this Report it appeared to the King, that Ferdinando did continue the Government of Castile as Administrator unto his Daughter Joan, by the Title of Queen Isabella's Will, and partly by the Custom of the Kingdom, as he pretended. And that all Mandates and Grants were expedited in the name of Joan his Daughter, and himself as Administrator, without mention of Philip, her Husband. And that King Ferdinando, howsoever he did dismiss himself of the name of King of Castile, yet meant to hold the Kingdom, without Accompt; and in absolute Command.

It appeareth also, that he flattered himself with hopes, that King Philip would permit unto him the Goverment of Castile during his life; which he had laid his Plot to work him unto, both by some Counsellors of his about him, which Ferdinando had at his devotion, and chiefly by promise, that in case Philip gave not way unto it, he would marry some young Lady, whereby to put him by the Succession of Arragon and Granada, in case he should have a Son. And lastly by representing unto him that the Government of the Burgundians, till Philip were by continuance in Spain made as Natural of Spain, would not be endured by the Spaniards. But in all those things (though wisely laid down and considered) Ferdinando failed; But that Pluto was better to him than Pallas.

In the same Report also, the Ambassadors being mean men, and therefore the more free, did strike upon a string which was somewhat dangerous. For they declared plainly, that the People of Spain, both Nobles and Commons, were better affected unto the part of Philip (so he brought his Wife with him) than to Ferdinando; and expressed the reason to be, because he had imposed upon them many Taxes; and Tallages, which was the King's own Case between him and his Son.

There was also in this Report a Declaration of an Overture of of Marriage, which Amason the Secretary of Ferdinando had made unto the Ambassadors in great secret, between Charles Prince of Castile and Mary the King's second Daughter; assuring the King, that the Treaty of Marriage then on foot, for the said Prince and the Daughter of France, would break, and that she the said

Daughter of France should be married to Angolesme, that was the Heir Apparant of France.

There was a touch also of a speech of Marriage between Ferdinando and Madam De Fois, a Lady of the Blood of France, which afterwards indeed succeeded. But this was reported as learned in France, and silenced in Spain.

The King by the return of this Ambassage, which gave great light unto his Affairs, was well instructed, and prepared how to carry himself between Ferdinando King of Arragon, and Philip his Son-in-law, King of Castile; resolving with himself, to do all that in him lay to keep them at one within themselves; But howsoever that succeeded, by a moderate Carriage and bearing the Person of a Common-friend, to lose neither of their Friendships; but yet to run a Course more entire with the King of Arragon, but more laboured and officious with the King of Castile. But he was much taken with the Overture of Marriage with his Daughter Mary; Both because it was the greatest Marriage of Christendom, and for that it took hold of both Allies.

But to corroborate his Alliance with Philip, the Winds gave him an Enterview. For Philip choosing the Winter-season, the better to surprise the King of Arragon, set forth with a great Navy out of Planders for Spain in the Month of January, the One and Twentieth year of the King's Reign. But himself was surprised with a cruel Tempest, that scattered his Ships upon the several Coasts of England. And the Ship wherein King and Queen were (with two other small Barques only) torn, and in great peril to escape the fury of the weather, thrust into Weymouth. King Philip himself, having not been used (as it seems) to Sea, all wearied and extreme sick, would needs land to refresh his Spirits, though it was against the Opinion of his Council, doubting it might breed Delay, his Occasions requiring Celerity.

The Rumour of the Arrival of a puissant Navy upon the Coast, made the Countrey Arm. And Sir Thomas Trenchard with Forces suddenly raised, not knowing what the matter might be, came to Weymouth. Where understanding the Accident, he did in all Humbleness and Humanity invite the King and Queen

to his House; and forthwith dispatched Posts to the Court. Soon after came Sir John Caroe likewise, with a great troop of Men well armed; using the like Humbleness and Respect towards the King, when he knew the Case. King Philip doubting that they, being but Subjects, durst not let him pass away again, without the King's Notice and Leave, yielded to their Entreaties, to stay till they heard from the Court. The King as soon as he heard the News, commanded presently the Earl of Arundel, to go to visit the King of Castile, and let him understand; That as he was very sorry for his Mishap, so he was glad that he had escaped the Danger of the Seas, and likewise of the Occasion himself had to do him Honour; and desiring him, to think himself as in his own Land; and that the King made all haste possible to come and embrace him. The Earl came to him in great Magnificence, with a brave Troop of three hundred Horse; and (for more State) came by Torch-light. After he had done the King's Message, King Philip seeing how the world went, the sooner to get away, went upon speed to the King at Windsor, and his Queen followed by easie journeys. The two Kings at their meeting used all the Caresses, and loving Demonstrations, that were possible. And the King of Castile said presently to the King; That he was now punished, for that he would not come within his walled Town of Calice, when they met last. But the King answered, That Walls and Seas were nothing, where Hearts were open, and that he was here no otherwise, but to be served. After a day or two's refreshing, the Kings entred into speech of renewing the Treaty; the King saying, That though King Philip's Person were the same, yet his Fortunes and State were raised. In which Case a Renovation of Treaty was used amongst Princes. But while these things were in handling, the King choosing a fit time, and drawing the King of Castile into a Room, where they two only were private, and laying his hand civilly upon his arm, and changing his Countenance a little from a Countenance of Entertainment, said to him; Sir, you have been saved upon my Coast, I hope you will not suffer me to wrack upon yours. The King of Castile asked him, What he meant by that speech? I mean it (saith the King) by that same Hare-brain wild Fellow, my Subject, the Earl of Suffolk, who is protected in your Countrey, and begins to play the Fool, when all others are

weary of it. The King of Castile answered; I had thought (Sir) your Felicity had been above those thoughts. But if it trouble you, I will banish him, The King replied; Those Hornets were best in their Nests, and worst when they did flie abroad, that his desire was, to have him delivered to him. The King of Castile herewith a little confused, and in a study, said; That can I not do with my honour, and less with yours; for you will be thought to have used me as a Prisoner. The King presently said; Then the matter is at an end. For I will take that dishonour upon me, and so your honour is saved. The King of Castile, who had the King in great Estimation, and besides remembred where he was, and knew not what use he might have of the King's Amity, for that himself was new in his Estate of Spain, and unsetled, both with his Fatherin-Law, and with his People, composing his Countenance, said; Sir, you give Law to me; but so will I to you. You shall have him, but (upon your honour) you shall not take his life. The King embracing him, said; Agreed. Saith the King of Castile, Neither shall it dislike you, if I send to him in such a fashion, as he may partly come with his own good will. The King said; It was well thought of; and if it pleased him, he would joyn with him, in sending to the Earl a Message to that purpose. They both sent severally, and mean while they continued Feasting and Pastimes. The King being (on his part) willing to have the Earl sure before the King of Castile went; and the King of Castile being as willing to seem to be enforced. The King also with many wise and excellent Perswasions, did advise the King of Castile, to be ruled by the counsel of his Fatherin-Law Ferdinando; a Prince so prudent, so experienced, so fortunate. The King of Castile (who was in no very good terms with his said Fatherin-Law) answered; That if his Father-inLaw would suffer him to govern his Kingdoms, he should govern him.

There were immediately Messengers sent from both Kings to recall the Earl of Suffolk: Who upon gentle words used to him was soon charmed, and willing enough to return; assured of his Life, and hoping of his Liberty. He was brought through Flanders to Calice, and thence landed at Dover, and with sufficient Guard delivered and received at the Tower of London. Mean while King Henry (to draw out the time) continued his Feastings and Entertainments, and after he

had received the King of Castile into the Fraternity of the Garter, and for a Reciprocal had his Son the Prince admitted to the Order of the Golden-fleece, he accompanied King Philip and his Queen to the City of London; where they were entertained with the greatest Magnificence and Triumph, that could be upon no greater warning. And as soon as the Earl of Suffolk had been conveyed to the Tower (which was the serious part) the Jollities had an end, and the Kings took leave. Nevertheless during their being here, they in substance concluded that Treaty, which the Flemings term Intercursus malus, and bears Date at Windsor; for that there be some things in it, more to the Advantage of the English, than of them; especially, for that the Free-fishing of the Dutch upon the Coasts and Seas of England, granted in the Treaty of Undecimo, was not by this Treaty confirmed. All Articles that confirm former Treaties being precisely and warily limited and confirmed to matter of Commerce only, and not otherwise.

It was observed, that the great Tempest which drave Philip into England, blew down the Golden Eagle, from the Spire of Pauls, and in the fall it fell upon a Sign of the Black Eagle, which was in Pauls Church-yard, in the place where the School-House now standeth, and battered it, and brake it down. Which was a strange stooping of a Hawk upon a Fowl. This the People interpreted to be an Ominous Prognostick upon the Imperial House, which was (by Interpretation also) fulfilled upon Philip the Emperor's Son, not only in the Present Disaster of the Tempest, but in that that followed. For Philip arriving into Spain, and attaining the Possession of the Kingdom of Castile without resistance, (insomuch as Ferdinando, who had spoke so great before, was with difficulty admitted to the speech of his Son-in-Law) sickned soon after, and deceased. Yet after such time as there was an Observation by the wisest of that Court, That if he had lived, his Father would have gained upon him in that sort, as he would have governed his Counsels and Designs, if not his Affections. By this all Spain returned into the power of Ferdinando in state as it was before; the rather, in regard of the infirmity of Joan his Daughter, who loving her Husband (by whom she had many Children) dearly well, and no less beloved of him) howsoever her Father, to make Philip ill beloved of the People of Spain, gave out that Philip

used her not well) was unable in strength of mind to bear the Grief of his Decease, and fell distracted of her Wits. Of which Malady her Father was thought no ways to endeavour the Cure, the better to hold his Regal Power in Castile. So that as the Felicity of Charles the Eighth was said to be a Dream; so the Adversity of Ferdinando was said likewise to be a Dream, it passed over so soon.

About this time the King was desirous to bring into the House of Lancaster Celestial Honour, and became Suitor to Pope Julius, to Canonize King Henry the Sixt for a Saint; the rather, in respect of that his famous Prediction of the King's own Assumption to the Crown. Julius referred the matter (as the manner is) to certain Cardinals, to take the verification of his Holy Acts and Miracles. But it dyed under the Reference. The general Opinion was, that Pope Julius was too dear, and that the King would not come to his Rates. But it is more probable, That that Pope (who was extremely jealous of the Dignity of the See of Rome, and of the Acts thereof) knowing that King Henry the Sixt was reputed in the World abroad but for a Simple Man, was afraid it would but diminish the Estimation of that kind of Honour, if there were not a distance kept between Innocents and Saints.

The same year likewise there proceeded a Treaty of Marriage between the King and the Lady Margaret Duchess Dowager of Savoy, only Daughter to Maximilian, and Sister to the King of Castile; a Lady wise, and of great good Fame. This Matter had been in speech between the two Kings at their meeting, but was soon after resumed; and therein was employed for his first piece the King's then Chaplain, and after the great Prelate Thomas Wolsey. It was in the end concluded, with great and ample Conditions for the King, but with promise De Futuro only. It may be the King was the rather induced unto it, for that he heard more and more of the Marriage to go on between his great Friend and Allie Ferdinando of Arragon, and Madam De Fois, whereby that King began to piece with the French King, from whom he had been always before severed. So fatal a thing it is, for the greatest and straitest Amities of Kings, at one time or other to have a little of the Wheel. Nay there is a further Tradition (in Spain,

though not with us) That the King of Arragon, after he knew that the Marriage between Charles, the young Prince of Castile, and Mary the King's second Daughter went roundly on (which though it was first moved by the King of Arragon, yet it was afterwards wholly advanced and brought to perfection by Maximilian, and the Friends on that side) entred into jealousie, that the King did aspire to the Government of Castilia, as Administrator during the Minority of his Son-inLaw; as if there should have been a Competition of Three for that Government; Ferdinando, Grand-father on the Mothers side; Maximilian, Grand-father on the Father's side; and King Henry, Fatherin-Law to the young Prince. Certainly, it is not unlike, but the King's Government (carrying the young Prince with him) would have been perhaps more welcom to the Spaniards, than that of the other Two. For the Nobility of Castilia, that so lately put out the King of Arragon, in favour of King Philip, and had discovered themselves so far, could not but be in a secret Distrust and Distast of that King. And as for Maximilian, upon Twenty respects he could not have been the Man. But this purpose of the King's seemeth to me (considering the King's safe Courses, never found to be enterprizing or adventurous) not greatly probable, except he should have had a Desire to breathe warmer, because he had ill Lungs. This Marriage with Margaret was protracted from time to time, in respect of the Infirmity of the King, who now in the Two and Twentieth year of his Reign began to be troubled with the Gout. But the Defluxion taking also into his Breast, wasted his Lungs, so that thrice in a Year (in a kind of Return, and especially in the Spring,) he had great Fitts and Labours of the Tissick. Nevertheless he continued to intend Business with as great diligence, as before in his Heath. Yet so, as upon this warning, he did likewise now more seriously think of the World to come, and of making himself a Saint, as well as King Henry the Sixth, by Treasure better employed, than to be given to Pope Julius. For this Year he gave greater Alms than accustomed, and discharged all Prisoners about the City, that lay for Fees or Debts, under forty Shillings. He did also make haste with Religious Foundations; and in the Year following (which was the Three and Twentieth) finished that of the Savoy. And hearing also of the bitter Cries of his People against the

Oppressions of Dudley and Empson, and their Complices; partly by Devout Persons about him, and partly by publick Sermons (the Preachers doing their Duty therein) he was touched with great Remorse for the same. Nevertheless, Empson and Dudley, though they could not but hear of these Scruples in the King's Conscience; yet as if the King's Soul and his Money were in several Offices, that the One was not to intermeddle with the Other, went on with as great rage as ever. For the same Three and Twentieth Year was there a sharp Prosecution against Sir William Capel now the second time; and this was for matters of Misgovernment in his Maioralty. The great Matter being, that in some Payments he had taken knowledge of False Moneys, and did not his diligence to examine, and beat it out, who were the Offendors. For this and some other things laid to his Charge, he was condemned to pay two thousand Pounds; and being a Man of stomach, and hardened by his former Troubles, refused to pay a Mite; and be-like used some untoward Speeches of the Proceedings, for which he was sent to the Tower, and there remained till the King's Death. Knesworth likewise, that had been lately Mayor of London, and both his Sheriffs, were, for Abuses in their Offices, questioned, and imprisoned, and delivered, upon one thousand four hundred Pounds paid. Hawis, an Alderman of London, was put in Trouble, and dyed with Thought and Anguish, before his Business came to an end. Sir Lawrence Ailmer, who had likewise been Mayor of London, and his two Sheriffs, were put to the Fine of one thousand Pounds. And Sir Lawrence, for refusing to make payment, was committed to Prison, where he stay'd till Empson himself was committed in his place.

It is no marvel (if the Faults were so light, and the Rates so heavy) that the King's Treasure of Store, that he left at his death, most of it in secret places, under his own key and keeping, at Richmond, amounted (as by Tradition it is reported to have done) unto the Summ of near eighteen hundred thousand Pounds Sterling; a huge Mass of Money, even for these times.

The last Act of State that concluded this King's Temporal Felicity, was the Conclusion of a Glorious Match between his Daughter Mary, and Charles Prince of Castile, afterwards the great Emperor, both being of tender years; which

Treaty was perfected by Bishop Fox, and other his Commissioners at Calice, the year before the King's Death. In which Alliance, it seemeth he himself took so high Contentment, as in a Letter which he wrote thereupon to the City of London, (Commanding all possible Demonstrations of Joy to be made for the same) he expresseth himself, as if he thought he had built a Wall of Brass about his Kingdom. When he had for his Sons-in-Law a King of Scotland, and a Prince of Castile and Burgundy. So as now there was nothing to be added to this great King's Felicity, being at the top of all worldly Bliss, (in regard of the high Marriages of his Children, his great Renown throughout Europe, and his scarce credible Riches, and the perpetual Constancy of his prosperous Successes) but an opportune Death, to withdraw him from any future blow of Fortune. Which certainly (in regard of the great Hatred of his People and the Title of his Son, being then come to Eighteen years of Age, and being a bold Prince and liberal, and that gained upon the People by his very Aspect and Presence) had not been impossible to have come upon him.

To crown also the last year of his Reign, as well as his first, he did an Act of Piety, rare, and worthy to be taken into Imitation. For he granted forth a General Pardon, as expecting a second Coronation in a better Kingdom. He did also declare in his Will, that his mind was, that Restitution should be made of those Summs, which had been unjustly taken by his Officers.

And thus this Solomon of England (for Solomon also was too heavy upon his People in Exactions) having lived Two and Fifty Years, and thereof Reigned Three and Twenty Years and Eight Months, being in perfect Memory, and in a most Blessed Mind, in a great Calm of a Consuming Sickness passed to a better World, the Two and Twentieth of April, 1508. at his Palace of Richmond, which himself had Built.

THis King (to speak of him in Terms equal to his Deserving) was one of the best sort of Wonders; a Wonder for Wise-men. He had parts (both in his Virtues, and his Fortune) not so for a Common-place, as for Observation. Certainly he was Religious, both in his Affection and Observance. But as he could see clear (for those times) through Superstition, so he would be blinded (now and than) by

Humane Policy. He advanced Church-men, he was tender in the Priviledge of Sanctuaries, though they wrought him much Mischief. He built and endowed many Religious Foundations, besides his Memorable Hospital of the Savoy. And yet was he a great Almsgiver in secret; which shewed, that his Works in publick were dedicated rather to God's glory, than his own. He professed always to love and seek Peace; and it was his usual Preface in his Treaties; That when Christ came into the World, Peace was sung; and when He went out of the World, Peace was bequeathed. And this Virtue could not proceed out of Fear, or Softness; for he was Valiant and Active, and therefore (no doubt) it was truly Christian and Moral. Yet he knew the way to Peace, was not to seem to be desirous to avoid Wars. Therefore would be make Offers, and Fames of Wars, till he had mended the Conditions of Peace. It was also much, that one that was so great a Lover of Peace, should be so happy in War. For his Arms (either in Forein or Civil Wars) were never Infortunate, neither did he know what a Disaster meant. The War of his Coming in, and the Rebellions of the Earl of Lincoln, and the Lord Awdley were ended by Victory. The Wars of France and Scotland, by Peaces sought at his hands. That of Britain, by accident of the Duke's death. The Insurrection of the Lord Lovel, and that of Perkin at Exceter, and in Kent, by flight of the Rebels, before they came to Blows. So that his Fortune of Arms was still Inviolate. The rather sure, for that in the quenching of the Commotions of his Subjects, he ever went in Person. Sometimes reserving himself to back and second his Lieutenants, but ever in Action; and yet that was not meerly Forwardness, but partly Distrust of others.

He did much maintain and countenance his Laws, which (nevertheless) was no Impediment to him to work his Will. For it was so handled, that neither Prerogative, nor Profit went to Diminution. And yet as he would sometimes strain up his Laws to his Prerogative, so would he also let down his Prerogative to his Parliament. For Mint, and Wars, and Martial Discipline, (things of absolute Power) he would nevertheless bring to Parliament. Justice was well administred in his time, save where the King was Party: Save also, that the CouncilTable intermedled too much with Meum and Tuum. For it was a very

Court of Justice during his time, especially in the Beginning. But in that part both of Justice and Policy, which is the Durable Part, and cut (as it were) in Brass or Marble (which is The making of good Laws) he did excell. And with his Justice, he was also a Merciful Prince, as in whose time, there were but three of the Nobility that suffered; the Earl of Warwick, the Lord Chamberlain, and the Lord Awdley. Though the first two were instead of Numbers, in the Dislike and Obloquie of the People. But there were never so great Rebellions, expiated with so little Blood, drawn by the hand of Justice, as the two Rebellions of Black-heath and Exceter. As for the Severity used upon those which were taken in Kent, it was but upon a Scum of People. His Pardons went ever both before, and after his Sword. But then he had withal a strange kind of Interchanging of large and inexpected Pardons, with severe Executions. Which (his Wisdom considered) could not be imputed to any Inconstancy, or Inequality; but either to some Reason which we do not now know, or to a Principle he had set unto himself, That he would vary, and try both ways in turn. But the less Blood he drew, the more he took of Treasure. And (as some construed it) he was the more sparing in the One, that he might be the more pressing in the Other; for both would have been intolerable. Of Nature assuredly he coveted to accumulate Treasure, and was a little Poor in admiring Riches. The People (into whom there is infused, for the preservation of Monarchies, a natural Desire to discharge their Princes, though it be with the charge of their Counsellors and Ministers) did impute this unto Cardinal Morton, and Sir Reginold Bray; who (as it after appeared) as Counsellors of ancient Authority with him, did so second his Humours, as nevertheless they did temper them. Whereas Empson, and Dudley that followed, being Persons that had no Reputation with him (otherwise than by the servile following of his Bent) did not give way only (as the first did) but shape him way to those Extremities, for which himself was touched with remorse at his Death, and which his Successor renounced, and sought to purge. This Excess of his, had at that time many Glosses and Interpretations. Some thought the continual Rebellions wherewith he had been vexed, had made him grow to hate his People. Some thought it was done to pull down their Stomachs,

and to keep them low. Some, for that he would leave his Son a Golden-fleece. Some suspected he had some high Design upon Forein parts. But those perhaps shall come nearest the truth, that fetch not their reasons so far off; but rather impute it to Nature, Age, Peace, and a Mind fixed upon no other. Ambition or Pursuit. Whereunto I should add, that having every day Occasion to take notice of the Necessities and Shifts for Money of other great Princes abroad, it did the better (by Comparison) set off to him the Felicity of full Coffers. As to his expending of Treasure, he never spared Charge which his Affairs required; and in his Buildings was Magnificent, but his Rewards were very limited. So that his Liberality was rather upon his own State and Memory, than upon the Deserts of others.

He was of an High Mind, and loved his own Will, and his own Way; as One that revered himself, and would Reign indeed. Had he been a Private-man, he would have been termed Proud. But in a wise Prince, it was but keeping of Distance, which indeed he did towards all; not admitting any near or full Approach, neither to his Power or to his Secrets. For he was governed by none. His Queen notwithstanding she had presented him with divers Children, and with a Crown also, (though he would not acknowledge it) could do nothing with him. His Mother he reverenced much, heard little. For any Person agreeable to him for Society (such as was Hastings to King Edward the Fourth, or Charles Brandon after to King Henry the Eighth) he had none: Except we should account for such Persons, Fox, and Bray, and Empson, because they were so much with him. But it was but as the Instrument is much with the Work-man. He had nothing in him of Vain-glory, but yet kept State and Majesty to the height; Being sensible, That Majesty maketh the People bow, but Vain-glory boweth to them.

To his Confederates abroad he was Constant and Just, but not Open. But rather such was his Inquiry, and such his Closeness, as they stood in the Light towards him, and he stood in the Dark to them. Yet without Strangeness, but with a semblance of mutual Communication of Affairs. As for little Envies or Emulations upon Forein Princes (which are frequent with many Kings) he had never any; but went substantially to his own Business. Certain it is, that though

his Reputation was great at home, yet it was greater abroad. For Foreiners that could not see the Passages of Affairs, but made their Judgments upon the Issues of them, noted that he was ever in Strife, and ever A-loft. It grew also from the Airs, which the Princes and States abroad received from their Ambassadors and Agents here; which were attending the Court in great number. Whom he did not only content with Courtesie, Reward, and Privateness; but (upon such Conferences as passed with them) put them in Admiration, to find his Universal Insight into the Affairs of the World. Which though he did suck chiefly from themselves; yet that which he had gathered from them all, seemed Admirable to every one: So that they did write ever to their Superiours in high terms, concerning his Wisdom and Art of Rule. Nay, when they were returned, they did commonly maintain Intelligence with him. Such a Dexterity he had to impropriate to himself all Forein Instruments.

He was careful and liberal to obtain good Intelligence from all parts abroad. Wherein he did not only use his Interest in the Liegers here, and his Pensioners which he had both in the Court of Rome, and other the Courts of Christendom; but the Industry and Vigilancy of his own Ambassadors in Forein parts. For which purpose, his Instructions were ever Extreme, Curious, and Articulate; and in them more Articles touching Inquisition, than touching Negotiation. Requiring likewise from his Ambassadors an Answer, in particular distinct Articles, respectively to his Questions.

As for his secret Spials, which he did employ both at home and abroad, by them to discover what Practices and Conspiracies were against him, surely his Case required it: He had such Moles perpetually working and casting to undermine him. Neither can it be reprehended. For if Spials be lawful against lawful Enemies, much more against Conspirators and Traytors. But indeed to give them Credence by Oaths or Curses, that cannot be well maintained; for those are too holy Vestments for a Disguise. Yet surely there was this further Good in his employing of these Flies and Familiars; That as the use of them was cause that many Conspiracies were revealed, so the Fame and Suspition of them kept (no doubt) many Conspiracies from being attempted.

Towards his Queen he was nothing Uxorious, nor scarce Indulgent; but Companiable, and Respective, and without Jealousie. Towards his Children he was full of Paternal Affection, Careful of their Education, aspiring to their High Advancement, regular to see that they should not want of any due Honour and Respect, but not greatly willing to cast any Popular Lustre upon them.

To his Council he did refer much, and sate oft in Person; knowing it to be the Way to assist his Power, and inform his Judgment. In which respect also he was fairly patient of Liberty, both of Advice, and of Vote, till himself were declared. He kept a strait hand on his Nobility, and chose rather to advance Clergy-men and Lawyers, which were more Obsequious to him, but had less Interest in the People; which made for his Absoluteness, but not for his Safety. In so much as (I am perswaded) it was one of the Causes of his Troublesom Reign; for that his Nobles, though they were Loyal and Obedient, yet did not Co-operate with him, but let every man go his own Way. He was not afraid of an Able Man, as Lewis the Eleventh was. But contrariwise, he was served by the Ablest Men that were to be found; without which his Affairs could not have prospered as they did. For War, Bedford, Oxford, Surrey, Dawbeney, Brook, Poynings. For other Affairs, Morton, Fox, Bray, the Prior of Lanthony, Warham, Urswick, Hussey, Frowick, and others. Neither did he care how Cunning they were, that he did employ; For he thought himself to have the Master-Reach. And as he chose well, so he held them up well. For it is a strange thing, that though he were a Dark Prince, and infinitely Suspitious, and his Times full of Secret Conspiracies and Troubles; yet in Twenty-four Years Reign, he never put down, or discomposed Counsellor, or near Servant, save only Stanley, the Lord Chamberlain. As for the Disposition of his Subjects in General towards him, it stood thus with him; That of the Three Affections, which naturally tye the Hearts of the Subjects to their Sovereigns, Love, Fear, and Reverence; he had the last in height, the second in good measure, and so little of the first, as he was beholding to the other Two.

He was a Prince, Sad, Serious, and full of Thoughts, and secret Observations, and full of Notes and Memorials of his own hand, especially touching Persons. As whom to Employ, whom to Reward, whom to Enquire of, whom to Beware

of, what were the Dependencies, what were the Factions, and the like; keeping (as it were) a Journal of his Thoughts. There is to this day a merry Tale; That his Monkey (set on as it was thought by one of his Chamber) tore his Principal NoteBook all to pieces, when by chance it lay forth. Whereat the Court (which liked not those Pensive Accompts) was almost tickled with sport.

He was indeed full of Apprehensions and Suspitions. But as he did easily take them, so he did easily check them, and master them: whereby they were not dangerous, but troubled himself more than others. It is true; his Thoughts were so many, as they could not well always stand together; but that which did good one way, did hurt another. Neither did he at some times weigh them aright in their proportions. Certainly, that Rumour which did him so much mischief (That the Duke of York should be saved, and alive) was (at the first) of his own nourishing; because he would have more Reason not to reign in the Right of his Wife. He was Affable, and both Well and Fair-spoken, and would use strange Sweetness and Blandishments of Words, where he desired to effect or perswade any thing that he took to heart. He was rather Studious than Learned; reading most Books that were of any worth, in the French Tongue. Yet he understood the Latin, as appeareth in that Cardinal Hadriah, and others, who could very well have written French; did usu to write to him in Latin.

For his Pleasures, there is no News of them. And yet by his Instructions to Marsin and Stile, touching the Queen of Naples, it seemeth he could Interrogate well touching Beauty. He did by Pleasures, as great Princes do by Banquets, come and look a little upon them, and turn away. For never Prince was more wholly given to his Affairs, nor in them more of himself. In so much, as in Triumphs of Justs and Tourneys, and Balls, and Masques (which they then called Disguises) he was rather a Princely and Gentle Spectator, than seemed much to be delighted.

No doubt, in bine as in all men (and most of all in Kings) his Fortune wrought upon his Nature, and his Nature upon his Fortune. He attained to the Crown, not only from a private Fortune, which might endow him with Moderation; but also from the Fortune of an Exiled Man, which had quickned in him all Seeds of

Observation and Industry. And his Times being rather Prosperous, than Calm, had raised his Confidence by Success, but almost marred his Nature by Troubles. His Wisdom, by often evading from Perils, was turned rather into a Dexterity to deliver himself from Dangers, when they pressed him, than into a Providence to prevent and remove them a far off. And even in Nature, the Sight of his Mind was like some Sights of Eyes; rather strong at hand, than to carry a far off. For his Wit increased upon the Occasion; and so much the more, if the Occasion were sharpened by Danger. Again, whether it were the shortness of his Foresight, or the strength of his Will, or the dazeling of his Suspitions, or what it was; Certain it is, that the perpetual Troubles of his Fortunes (there being no more matter out of which they grew) could not have been without some great Defects, and main Errours in his Nature, Customs, and Proceedings, which he had enough to do to save and help, with a thousand little Industries and Watches. But those do best appear in the Story it self. Yet take him with all his Defects if a Man should compare him with the Kings his Concurrents, in France, and Spain, he shall find him more Politick than Lewis the Twelfth of France, and more Entire and Sincere than Ferdinando of Spain. But if you shall change Lewis the Twelfth, for Lewis the Eleventh, who lived a little before; then the Consort is more perfect. For that Lewis the Eleventh, Ferdinando, and Henry, may be esteemed for the Tres Magi of Kings of those Ages. To conclude, If this King did no greater matters, it was long of himself; for what he minded, he compassed.

He was a Comely Personage, a little above Just Stature, well and straight limmed, but slender. His Countenance was Reverend, and a little like a Church-man: And as it was not strange or dark, so neither was it Winning or Pleasing, but as the Face of one well disposed. But it was to the Disadvantage of the Painter; for it was best when he spake.

His Worth may bear a Tale or two, that may put upon him somewhat that may seem Divine. When the Lady Margaret his Mother had divers great Suitors for Marriage, she dreamed one Night, That one in the likeness of a Bishop, in Pontificial habit, did tender her Edmund Earl of Richmond (the King’s Father)

for her Husband. Neither had she ever any Child but the King, though she had three Husbands. One day when King Henry the Sixth, (whose Innocency gave him Holiness) was washing his hands at a great Feast, and cast his Eye upon King Henry, then a young Youth, he said; This is the Lad, that shall possess quietly that that we now strive for. But that that was truly Divine in him, was, that he had the Fortune of a True Christian, as well as of a Great King, in living Exercised, and dying Repentant. So as he had an happy Warfare in both Conflicts, both of Sin, and the Cross.

He was born at Pembrook-Castle, and lyeth buried at Westminster, in one of the Stateliest and Daintiest Monuments of Europe, both for the Chappel, and for the Sepulchre. So that he dwelleth more richly Dead, in the Monument of his Tomb, than he did Alive in Richmond, or any of his Palaces. I could wish he did the like, in this Monument of his Fame.

FINIS.

Translation of Certain Psalms into English Verse

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TO HIS VERY GOOD FRIEND, MR. GEORGE HERBERT.

The pains that it pleased you to take about some of my writings, I cannot forget; which did put me in mind to dedicate to you this poor exercise of my sickness. Besides, it being my manner for dedications, to choose those that I hold most fit for the argument, I thought, that in respect of divinity and poesy met, whereof the one is the matter, the other the style of this little writing, I could not make better choice: so, with signification of my love and acknowledgment, I ever rest Your affectionate friend, Fr. St. Alban

THE TRANSLATION OF THE Ist PSALM.

Who never gave to wicked reed
A yielding and attentive car;
Who never sinners paths did tread,
Nor sat him down in scorner's chair;
But maketh it his whole delight
On law of God to meditate;
And therein spendeth day and night:
That man is in a happy state.

He shall be like the fruitful tree,
Planted along a running spring,
Which, in due season, constantly
A goodly yield of fruit doth bring:
Whose leaves continue always green,
And are no prey to winter's power:
So shall that man not once be seen
Surprised with an evil hour.

With wicked men it is not so,
Their lot is of another kind:
All as the chaff, which to and fro
Is toss'd at mercy of the wind.
And when he shall in judgment plead,
A casting sentence bide he must:
So shall he not lift up his head
In the assembly of the just.

For why? the Lord hath special eye
To be the godly's stay at call:

And hath given over, righteously,
The wicked man to take his fall.

THE TRANSLATION OF THE XIIth PSALM.

Help, Lord, for godly men have took their flight,
And left the earth to be the wicked's den:
Not one that standeth fast to truth and right,
But fears, or seeks to please, the eyes of men.
When one with other falls in talk apart,
Their meaning go'th not with their words, in proof,
But fair they flatter, with a cloven heart,
By pleasing words, to work their own behoof.

But God cut off the lips, that are all set
To trap the harmless soul, that peace hath vow'd;
And pierce the tongues, that seek to counterfeit
The confidence of truth, by lying loud:
Yet so they think to reign, and work their will
By subtile speech, which enters everywhere;
And say: Our tongues are ours, to help us still;
What need we any higher pow'r to fear?

Now for the bitter sighing of the poor,
The Lord hath said, I will no more forbear
The wicked's kingdom to invade and scour,
And set at large the men restrain'd in fear.
And sure the word of God is pure and fine,
And in the trial never loseth weight;
Like noble gold, which, since it left the mine,
Hath seven times pass'd through the fiery strait.

And now thou wilt not first thy word forsake,
Nor yet the righteous man that leans thereto;

But wilt his safe protection undertake,
In spite of all their force and wiles can do.
And time it is, O Lord, thou didst draw nigh;
The wicked daily do enlarge their bands;
And that which makes them follow ill a vie,
Rule is betaken to unworthy hands.

THE TRANSLATION OF THE XCth PSALM.

O Lord, thou art our home, to whom we fly,
And so hast always been from age to age;
Before the hills did intercept the eye,
Or that the frame was up of earthly stage.
One God thou wert, and art, and still shalt be;
The line of time, it doth not measure thee.

Both death and life obey thy holy lore,
And visit in their turns, as they are sent;
A thousand years with thee they are no more
Than yesterday, which, ere it is, is spent:
Or as a watch by night, that course doth keep,
And goes, and comes, unwares to them that sleep.

Thou carryest man away as with a tide:
Then down swim all his thoughts that mounted high;
Much like a mocking dream, that will not bide,
But flies before the sight of waking eye;
Or as the grass, that cannot term obtain!
To see the summer come about again.

At morning, fair it musters on the ground;
At even it is cut down, and laid along:
And though it spared were, and favour found,
The weather would perform the mower's wrong:
Thus hast thou hang'd our life on brittle pins,
To let us know it will not bear our sins.

Thou buryest not within oblivion's tomb
Our trespasses, but enterest them aright;
Ev'n those that are conceived in darkness' womb,
To thee appear as done at broad day-light.
As a tale told, which sometimes men attend,
And sometimes not, our life steals to an end.

The life of man is threescore years and ten,
Or, if that he be strong, perhaps fourscore;
Yet all things are but labour to him then,
New sorrows still come on, pleasures no more.
Why should there be such turmoil and such strife.
To spin in length this feeble line of life?

But who considers duly of thine ire?
Or doth the thoughts thereof wisely embrace?
For thou, O God, art a consuming fire:
Frail man, how can he stand before thy face?
If thy displeasure thou dost not refrain,
A moment brings all back to dust again.

Teach us, O Lord, to number well our days,
Thereby our hearts to wisdom to apply;
For that which guides man best in all his ways,
Is meditation of mortality.
This bubble light, this vapour of our breath,
Teach us to consecrate to hour of death.

Return unto us, Lord, and balance now,
With days of joy, our days of misery;
Help us right soon, our knees to thee we bow,

Depending wholly on thy clemency;
Then shall thy servants both with heart and voice,
All the days of their life in thee rejoice.

Begin thy work, O Lord, in this our age,
Shew it unto thy servants that now live;
But to our children raise it many a stage,
That all the world to thee may glory give.
Our handy-work likewise, as fruitful tree
Let it, O Lord, blessed, not blasted be.

THE TRANSLATION OF THE CIVth PSALM.

Father and King of powers, both high and low,
Whose sounding fame all creatures serve to blow;
My soul shall with the rest strike up thy praise,
And carol of thy works and wondrous ways.
But who can blaze thy beauties, Lord, aright?
They turn the brittle beams of mortal sight.
Upon thy head thou wear'st a glorious crown,
All set with virtues, polish'd with renown:
Thence round about a silver veil doth fall
Of crystal light, mother of colours all.
The compass heaven, smooth without grain, or fold,
All set with spangs of glittering stars untold,
And striped with golden beams of power unpent,
Is raised up for a removing tent.
Vaulted and arched are his chamber beams
Upon the seas, the waters, and the streams:
The clouds as chariots swift do scour the sky;
The stormy winds upon their wings do fly.
His angels spirits are, that wait his will,
As flames of fire his anger they fulfil.
In the beginning, with a mighty hand,
He made the earth by counterpoise to stand,
Never to move, but to be fixed still;
Yet hath no pillars but his sacred will.
This earth, as with a veil, once cover'd was,
The waters over-flowed all the mass:
But upon his rebuke away they fled,
And then the hills began to show their head;
The vales their hollow bosoms open'd plain

The vales their hollow bosoms open'd plain,
The streams ran trembling down the vales again:
And that the earth no more might drowned be,
He set the sea his bounds of liberty;
And though his waves resound, and beat the shore,
Yet it is bridled by his holy lore.
Then did the rivers seek their proper places,
And found their heads, their issues, and their races;
The springs do feed the rivers all the way,
And so the tribute to the sea repay:
Running along through many a pleasant field,
Much fruitfulness unto the earth they yield:
That know the beasts and cattle feeding by,
Which for to slake their thirst do thither hie.
Nay, desert grounds the streams do not forsake,
But through the unknown ways their journey take:
The asses wild, that hide in wilderness,
Do thither come, their thirst for to refresh.
The shady trees along their banks do spring,
In which the birds do build, and sit, and sing;
Stroking the gentle air with pleasant notes,
Plaining, or chirping through their warbling throats.
The higher grounds, where waters cannot rise,
By rain and dews are water'd from the skies;
Causing the earth put forth the grass for beasts,
And garden herbs, served at the greatest feasts;
And bread, that is all viands firmament,
And gives a firm and solid nourishment;
And wine, man's spirits for to recreate;
And oil, his face for to exhilarate.
The sappy cedars, tall like stately towers,
High-flying birds do harbour in their bowers;

High-flying birds do harbour in their bowers.
The holy storks, that are the travellers,
Choose for to dwell and build within the firs;
The climbing goats hang on steep mountains' side;
The digging conies in the rocks do bide.
The moon, so constant in inconstancy,
Doth rule the monthly seasons orderly;
The sun, eye of the world, doth know his race,
And when to show, and when to hide his face.
Thou makest darkness, that it may be night,
When as the savage beasts, that fly the light,
As conscious of man's hatred, leave their den,
And range abroad, secured from sight of men.
Then do the forests ring of lions roaring,
That ask their meat of God, their strength restoring;
But when the day appears, they back do fly,
And in their dens again do lurking lie.
Then man goes forth to labour in the field,
Whereby his grounds more rich increase may yield.
O Lord, thy providence sufficeth all;
Thy goodness, not restrained, but general
Over thy creatures: the whole earth doth flow
With thy great largess pour'd forth here below.
Nor is it earth alone exalts thy name,
But seas and streams likewise do spread the same.
The rolling seas unto the lot doth fall
Of beasts innumerable, great and small;
There do the stately ships plow up the floods,
The greater navies look like walking woods;
The fishes there far voyages do make,
To divers shores their journey they do take.
There hast thou set the great Leviathan

There hast thou set the great Leviathan,
That makes the seas to seeth like boiling pan.
All these do ask of thee their meat to live,
Which in due season thou to them dost give.
Ope thou thy hand, and then they have good fare;
Shut thou thy hand, and then they troubled are.
All life and spirit from thy breath proceed,
Thy word doth all things generate and feed.
If thou withdraw'st it, then they cease to be,
And straight return to dust and vanity;
But when thy breath thou dost send forth again,
Then all things do renew and spring amain;
So that the earth, but lately desolate,
Doth now return unto the former state.
The glorious majesty of God above
Shall ever reign in mercy and in love:
God shall rejoice all his fair works to see,
For as they come from him all perfect be.
The earth shall quake, if aught his wrath provoke;
Let him but touch the mountains, they shall smoke.
As long as life doth last I hymns will sing,
With cheerful voice, to the eternal King;
As long as I have being, I will praise
The works of God, and all his wondrous ways.
I know that he my words will not despise,
Thanksgiving is to him a sacrifice.
But as for sinners they shall be destroy'd
From off' the earth, their places shall be void.
Let all his works praise him with one accord;
O praise the Lord, my soul; praise ye the Lord!

THE TRANSLATION OF THE CXXVIth PSALM

When God return'd us graciously
  Unto our native land,
We seem'd as in a dream to be,
  And in a maze to stand.

The heathen likewise they could say:
  The God, that these men serve,
Hath done great things for them this day,
  Their nation to preserve.

'Tis true; God hath pour'd out his grace
  On us abundantly,
For which we yield him psalms and praise,
  And thanks with jubilee.

O Lord, turn our captivity,
  As winds, that blow at south,
Do pour the tides with violence
  Back to the rivers mouth.

Who sows in tears shall reap in joy,
  The Lord doth so ordain;
So that his seed be pure and good,
  His harvest shall be gain.

THE TRANSLATION OF THE CXXXVIIth PSALM.

When as we sat, all sad and desolate,
By Babylon upon the river's side,
Easel from the tasks, which in our captive state
We were enforced daily to abide,
Our harps we had brought with us to the field,
Some solace to our heavy souls to yield.

But soon we found we fail'd of our account,
For when our minds some freedom did obtain,
Straightways the memory of Sion Mount
Did cause afresh our wounds to bleed again;
So that with present griefs, and future fears,
Our eyes burst forth into a stream of tears.

As for our harps, since sorrow struck them dumb,
We hang'd them on the willow-trees were near;
Yet did our cruel masters to us come,
Asking of us some Hebrew songs to hear:
Taunting us rather in our misery,
Than much delighting in our melody.

Alas, said we, who can once force or frame
His grieved and oppressed heart to sing
The praises of Jehovah's glorious name,
In banishment, under a foreign king?
In Zion is his seat and dwelling-place,
Thence doth he show the brightness of his face.

Jerusalem, where God his throne hath set,
Shall any hour absent thee from my mind?
Then let my right-hand quite her skill forget,
Then let my voice and words no passage find;
Nay, if I do not thee prefer in all,
That in the compass of my thoughts can fall.

Remember thou, O Lord, the cruel cry
Of Edom's children, which did ring and sound,
Inciting the Chaldean's cruelty,
"Down with it, down with it, even unto the ground."
In that good day repay it unto them,
When thou shalt visit thy Jerusalem.

And thou, O Babylon, shalt have thy turn
By just revenge, and happy shall he be,
That thy proud walls and tow'rs shall waste and burn,
And as thou didst by us, so do by thee.
Yea, happy he, that takes thy children's bones,
And dasheth them against the pavement stones.

THE TRANSLATION OF THE CXLIXth PSALM.

O Sing a new song to our God above,
Avoid prophane ones, 'tis for holy choir:
Let Israel sing songs of holy love
To him that made them, with their hearts on fire:
Let Zion's sons lift up their voice and sing
Carols and anthems to their heavenly King.

Let not your voice alone his praise forth tell,
But move withal, and praise him in the dance;
Cymbals and harps let them be tuned well,
'Tis he that doth the poor's estate advance:
Do this not only on the solemn days,
But on your secret beds your spirits raise.

O let the saints bear in their mouth his praise,
And a two-edged sword drawn in their hand,
Therewith for to revenge the former days
Upon all nations that their zeal withstand;
To bind their kings in chains of iron strong,
And manacle their nobles for their wrong.

Expect the time, for 'tis decreed in heaven,
Such honour shall unto his saints be given.

Preparative toward a Natural and Experimental History

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Description of a Natural and Experimental History Such as May Serve for the Foundation of a True Philosophy

My object in publishing my *Instauration* by parts is that some portion of it may be put out of peril. A similar reason induces me to subjoin here another small portion of the work, and to publish it along with that which has just been set forth. This is the description and delineation of a natural and experimental history, such as may serve to build philosophy upon, and containing material true and copious and aptly digested for the work of the interpreter which follows. The proper place for it would be when I come in due course to the "Preparatives" of Inquiry. I have thought it better, however, to introduce it at once without waiting for that. For a history of this kind, such as I conceive and shall presently describe, is a thing of very great size and cannot be executed without great labor and expense, requiring as it does many people to help, and being (as I have said elsewhere) a kind of royal work. It occurs to me, therefore, that it may not be amiss to try if there be any others who will take these matters in hand, so that while I go on with the completion of my original design, this part which is so manifold and laborious may even during my life (if it so please the Divine Majesty) be prepared and set forth, others applying themselves diligently to it along with me; the rather because my own strength (if I should have no one to help me) is hardly equal to such a province. For as much relates to the work itself of the intellect, I shall perhaps be able to master that by myself; but the materials on which the intellect has to work are so widely spread that one must employ factors and merchants to go everywhere in search of them and bring them in. Besides I hold it to be somewhat beneath the dignity of an undertaking like mine that I should spend my own time in a matter which is open to almost every man's industry. That, however, which is the main part of the matter I will myself now supply, by diligently and exactly setting forth the method and

description of a history of this kind, such as shall satisfy my intention; lest men for want of warning set to work the wrong way and guide themselves by the example of the natural histories now in use, and so go far astray from my design. Meanwhile, what I have often said I must here emphatically repeat: that if all the wits of all the ages had met or shall hereafter meet together, if the whole human race had applied or shall hereafter apply themselves to philosophy, and the whole earth had been or shall be nothing but academies and colleges and schools of learned men, still without a natural and experimental history such as I am going to prescribe, no progress worthy of the human race could have been made or can be made in philosophy and the sciences. Whereas, on the other hand, let such a history be once provided and well set forth, and let there be added to it such auxiliary and light-giving experiments as in the very course of interpretation will present themselves or will have to be found out, and the investigation of nature and of all sciences will be the work of a few years. This, therefore, must be done or the business must be given up. For in this way, and in this way only, can the foundations of a true and active philosophy be established; and then will men wake as from deep sleep, and at once perceive what a difference there is between the dogmas and figments of the wit and a true and active philosophy, and what it is in questions of nature to consult nature herself.

First, then, I will give general precepts for the composition of this history; then I will set out the particular figure of it, inserting sometimes as well the purpose to which the inquiry is to be adapted and referred as the particular point to be inquired in order that a good understanding and forecast of the mark aimed at may suggest to men's minds other things also which I may perhaps have overlooked. This history I call "Primary History," or the "Mother History."

Aphorisms on the Composition of the Primary History

I

Nature exists in three states, and is subject, as it were, to three kinds of regimen. Either she is free and develops herself in her own ordinary course, or she is forced out of her proper state by the perverseness and insubordination of matter and the violence of impediments, or she is constrained and molded by art and human ministry. The first state refers to the "species" of things; the second to "monsters"; the third to "things artificial." For in things artificial nature takes orders from man and works under his authority; without man, such things would never have been made. But by the help and ministry of man a new face of bodies, another universe or theater of things, comes into view. Natural history therefore is threefold. It treats of the "liberty" of nature, or the "errors" of nature, or the "bonds" of nature, so that we may fairly distribute it into history of "generations," of "pretergenerations," and of "arts"; which last I also call "mechanical" or "experimental" history. And yet I do not make it a rule that these three should be kept apart and separately treated. For why should not the history of the monsters in the several species be joined with the history of the species themselves? And things artificial again may sometimes be rightly joined with the species, though sometimes they will be better kept separate. It will be best, therefore, to consider these things as the case arises. For too much method produces iterations and prolixity as well as none at all.

II

Natural history, which in its subject (as I said) is threefold, is in its use twofold. For it is used either for the sake of the knowledge of the particular things which it contains or as the primary material of philosophy and the stuff and subject matter of true induction. And it is this latter which is now in hand — now, I say,

for the first time; nor has it even been taken in hand till now. For neither Aristotle, nor Theophrastus, nor Dioscorides, nor Gaius Plinius ever set this before them as the end of natural history. And the chief part of the matter rests in this, that they who shall hereafter take it upon them to write natural history should bear this continually in mind — that they ought not to consult the pleasure of the reader, no, nor even that utility which may be derived immediately from their narrations, but to seek out and gather together such store and variety of things as may suffice for the formation of true axioms. Let them but remember this, and they will find out for themselves the method in which the history should be composed. For the end rules the method.

III

But the more difficult and laborious the work is, the more ought it to be discharged of matters superfluous. And therefore there are three things upon which men should be warned to be sparing of their labor, as those which will immensely increase the mass of the work and add little or nothing to its worth.

First then, away with antiquities, and citations or testimonies of authors, and also with disputes and controversies and differing opinions — everything, in short, which is philological. Never cite an author except in a matter of doubtful credit; never introduce a controversy unless in a matter of great moment. And for all that concerns ornaments of speech, similitudes, treasury of eloquence, and such like emptinesses, let it be utterly dismissed. Also let all those things which are admitted be themselves set down briefly and concisely, so that they may be nothing less than words. For no man who is collecting and storing up materials for ship building or the like, thinks of arranging them elegantly, as in a shop, and displaying them so as to please the eye; all his care is that they be sound and good, and that they be so arranged as to take up as little room as possible in the warehouse. And this is exactly what should be done here.

Secondly, that superfluity of natural histories in descriptions and pictures of species, and the curious variety of the same, is not much to the purpose. For

small varieties of this kind are only a kind of sports and wanton freaks of nature and come near to the nature of individuals. They afford a pleasant recreation in wandering among them and looking at them as objects in themselves, but the information they yield to the sciences is slight and almost superfluous.

Thirdly, all superstitious stories (I do not say stories of prodigies, when the report appears to be faithful and probable, but superstitious stories) and experiments of ceremonial magic should be altogether rejected. For I would not have the infancy of philosophy, to which natural history is as a nursing mother, accustomed to old wives' fables. The time will perhaps come (after we have gone somewhat deeper into the investigation of nature) for a light review of things of this kind, that if there remain any grains of natural virtue in these dregs, they may be extracted and laid up for use. In the meantime they should be set aside. Even the experiments of natural magic should be sifted diligently and severely before they are received, especially those which are commonly derived from vulgar sympathies and antipathies, with great sloth and facility both of believing and inventing.

And it is no small thing to relieve natural history from the three superfluities above mentioned, which would otherwise fill volumes. Nor is this all. For in a great work it is no less necessary that what is admitted should be written succinctly than that what is superfluous should be rejected, though no doubt this kind of chastity and brevity will give less pleasure both to the reader and the writer. But it is always to be remembered that this which we are now about is only a granary and storehouse of matters, not meant to be pleasant to stay or live in, but only to be entered as occasion requires, when anything is wanted for the work of the interpreter which follows.

IV

In the history which I require and design, special care is to be taken that it be of wide range and made to the measure of the universe. For the world is not to be narrowed till it will go into the understanding (which has been done hitherto),

but the understanding to be expanded and opened till it can take in the image of the world as it is in fact. For that fashion of taking few things into account, and pronouncing with reference to a few things, has been the ruin of everything. To resume then the divisions of natural history which I made just now — viz., that it is a history of generations, Pretergenerations, and arts — I divide the history of generations into five parts. The first, of ether and things celestial. The second, of meteors and the regions (as they call them) of air, viz., of the tracts which lie between the moon and the surface of the earth; to which part also (for order's sake, however the truth of the thing may be) I assign comets of whatever kind, both higher and lower. The third, of earth and sea. The fourth, of the elements (as they call them), flame or fire, air, water, earth, understanding, however, by elements, not the first principles of things, but the greater masses of natural bodies. For the nature of things is so distributed that the quantity or mass of some bodies in the universe is very great, because their configurations require a texture of matter easy and obvious, such as are those four bodies which I have mentioned; while of certain other bodies the quantity is small and weakly supplied, because the texture of matter which they require is very complex and subtle, and for the most part determinate and organic, such as are the species of natural things — metals, plants, animals. Hence I call the former kind of bodies the "greater colleges," the latter the "lesser colleges." Now the fourth part of the history is of those greater colleges — under the name of elements, as I said. And let it not be thought that I confound this fourth part with the second and third, because in each of them I have mentioned air, water, and earth. For the history of these enters into the second and third, as they are integral parts of the world, and as they relate to the fabric and configuration of the universe. But in the fourth is contained the history of their own substance and nature, as it exists in their several parts of uniform structure, and without reference to the whole. Lastly, the fifth part of the history contains the lesser colleges, or species, upon which natural history has hitherto been principally employed.

As for the history of pretergenerations, I have already said that it may be most conveniently joined with the history of generations — I mean the history of

prodigies which are natural. For the superstitious history of marvels (of whatever kind) I remit to a quite separate treatise of its own; which treatise I do not wish to be undertaken now at first, but a little after, when the investigation of nature has been carried deeper.

History of arts, and of nature as changed and altered by man, or experimental history, I divide into three. For it is drawn either from mechanical arts, or from the operative part of the liberal arts, or from a number of crafts and experiments which have not yet grown into an art properly so called, and which sometimes indeed turn up in the course of most ordinary experience and do not stand at all in need of art.

As soon, therefore, as a history has been completed of all these things which I have mentioned — namely, generations, pretergenerations, arts, and experiments, it seems that nothing will remain unprovided whereby the sense can be equipped for information of the understanding. And then shall we be no longer kept dancing within little rings, like persons bewitched, but our range and circuit will be as wide as the compass of the world.

V

Among the parts of history which I have mentioned, the history of arts is of most use because it exhibits things in motion and leads more directly to practice. Moreover, it takes off the mask and veil from natural objects, which are commonly concealed and obscured under the variety of shapes and external appearance. Finally, the vexations of art are certainly as the bonds and handcuffs of Proteus, which betray the ultimate struggles and efforts of matter. For bodies will not be destroyed or annihilated, rather than that they will turn themselves into various forms. Upon this history, therefore, mechanical and illiberal as it may seem (all fineness and daintiness set aside), the greatest diligence must be bestowed.

Again, among the particular arts those are to be preferred which exhibit, alter, and prepare natural bodies and materials of things, such as agriculture, cookery,

chemistry, dyeing, the manufacture of glass, enamel, sugar, gunpowder, artificial fires, paper, and the like. Those which consist principally in the subtle motion of the hands or instruments are of less use, such as weaving, carpentry, architecture, manufacture of mills, clocks, and the like, although these too are by no means to be neglected, both because many things occur in them which relate to the alterations of natural bodies, and because they give accurate information concerning local motion, which is a thing of great importance in very many respects.

But in the whole collection of this history of arts it is especially to be observed and constantly borne in mind that not only those experiments in each art which serve the purpose of the art itself are to be received, but likewise those which turn up anyhow by the way. For example, that locusts or crabs, which were before of the color of mud, turn red when baked is nothing to the table; but this very instance is not a bad one for investigating the nature of redness, seeing that the same thing happens in baked bricks. In like manner the fact that meat is sooner salted in winter than in summer is not only important for the cook that he may know how to regulate the pickling, but is likewise a good instance for showing the nature and impression of cold. Therefore, it would be an utter mistake to suppose that my intention would be satisfied by a collection of experiments of arts made only with the view of thereby bringing the several arts to greater perfection. For though this be an object which in many cases I do not despise, yet my meaning plainly is that all mechanical experiments should be as streams flowing from all sides into the sea of philosophy. But how to select the more important instances in every kind (which are principally and with the greatest diligence to be sought and as it were hunted out) is a point to be learned from the prerogatives of instances.

VI

In this place also is to be resumed that which in the 99th, 119th, and 120th aphorisms of the first book I treated more at large, but which it may be enough

here to enjoin shortly by way of precept — namely, that there are to be received into this history, first, things the most ordinary, such as it might be thought superfluous to record in writing because they are so familiarly known; secondly, things mean, illiberal, filthy (for "to the pure all things are pure," and if money obtained from Vespasian's tax smelt well, much more does light and information from whatever source derived); thirdly, things trifling and childish (and no wonder, for we are to become again as little children); and lastly, things which seem over subtle, because they are in themselves of no use. For the things which will be set forth in this history are not collected (as I have already said) on their own account; and therefore neither is their importance to be measured by what they are worth in themselves, but according to their indirect bearing upon other things and the influence they may have upon philosophy.

VII

Another precept is that everything relating both to bodies and virtues in nature be set forth (as far as may be) numbered, weighed, measured, defined. For it is works we are in pursuit of, not speculations; and practical working comes of the due combination of physics and mathematics. And therefore the exact revolutions and distances of the planets — in the history of the heavenly bodies; the compass of the land and the superficial space it occupies in comparison of the waters — in the history of earth and sea; how much compression air will bear without strong resistance — in the history of air; how much one metal outweighs another — in the history of metals; and numberless other particulars of that kind are to be ascertained and set down. And when exact proportions cannot be obtained, then we must have recourse to indefinite estimates and comparatives. As for instance (if we happen to distrust the calculations of astronomers as to the distances of the planets), that the moon is within the shadow of the earth, that Mercury is beyond the moon, and the like. Also when mean proportions cannot be had, let extremes be proposed, as that a weak magnet will raise so many times its own weight of iron, while the most powerful

will raise sixty times its own weight (as I have myself seen in the case of a very small armed magnet). I know well enough that these definite instances do not occur readily or often, but that they must be sought for as auxiliaries in the course of interpretation itself when they are most wanted. But nevertheless if they present themselves accidentally, provided they do not too much interrupt the progress of the natural history, they should also be entered therein.

VIII

With regard to the credit of the things which are to be admitted into the history, they must needs be either certainly true, doubtful whether true or not, or certainly not true. Things of the first kind should be set down simply; things of the second kind with a qualifying note, such as “it is reported,” “they relate,” “I have heard from a person of credit,” and the like. For to add the arguments on either side would be too laborious and would certainly interrupt the writer too much. Nor is it of much consequence to the business in hand because (as I have said in the 118th aphorism of the first book) mistakes in experimenting, unless they abound everywhere, will be presently detected and corrected by the truth of axioms. And yet if the instance be of importance, either from its own use or because many other things may depend upon it, then certainly the name of the author should be given, and not the name merely, but it should be mentioned withal whether he took it from report, oral or written (as most of Pliny’s statements are), or rather affirmed it of his own knowledge; also whether it was a thing which happened in his own time or earlier; and again, whether it was a thing of which, if it really happened, there must needs have been many witnesses; and finally, whether the author was a vain-speaking and light person or sober and severe; and the like points, which bear upon the weight of the evidence. Lastly, things which though certainly not true are yet current and much in men’s mouths, having either through neglect or from the use of them in similitudes prevailed now for many ages (as that the diamond binds the magnet, garlic weakens it, that amber attracts everything except basil, and other things of

that kind), these it will not be enough to reject silently; they must be in express words proscribed, that the sciences may be no more troubled with them.

Besides, it will not be amiss, when the source of any vanity or credulity happens to present itself, to make a note of it, as, for example, that the power of exciting Venus is ascribed to the herb Satyrion because its root takes the shape of testicles — when the real cause of this is that a fresh bulbous root grows upon it every year, last year's root still remaining; whence those twin bulbs. And it is manifest that this is so, because the new root is always found to be solid and succulent, the old withered and spongy. And therefore it is no marvel if one sinks in water and the other swims — which nevertheless goes for a wonder and has added credit to the other virtues ascribed to this herb.

IX

There are also some things which may be usefully added to the natural history, and which will make it fitter and more convenient for the work of the interpreter, which follows. They are five.

First, questions (I do not mean as to causes but as to the fact) should be added in order to provoke and stimulate further inquiry, as in the history of earth and sea, whether the Caspian ebbs and flows, and at how many hours' interval; whether there is any southern continent or only islands, and the like.

Secondly, in any new and more subtle experiment the manner in which the experiment was conducted should be added, that men may be free to judge for themselves whether the information obtained from that experiment be trustworthy or fallacious, and also that men's industry may be roused to discover, if possible, methods more exact.

Thirdly, if in any statement there be anything doubtful or questionable, I would by no means have it suppressed or passed in silence, but plainly and perspicuously set down by way of note or admonition. For I want this primary history to be compiled with a most religious care, as if every particular were stated upon oath, seeing that it is the book of God's works and (so far as the

majesty of heavenly may be compared with the humbleness of earthly things) a kind of second Scripture.

Fourthly, it would not be amiss to intersperse observations occasionally, as Pliny has done; as in the history of earth and sea, that the figure of the earth (as far as it is yet known) compared with the seas is narrow and pointed toward the south, wide and broad toward the north, the figure of the sea contrary; that the great oceans intersect the earth in channels running north and south, not east and west, except perhaps in the extreme polar regions. It is also very good to add canons (which are nothing more than certain general and catholic observations), as in the history of the heavenly bodies, that Venus is never distant more than 46 parts from the sun, Mercury never more than 23, and that the planets which are placed above the sun move slowest when they are furthest from the earth, those under the sun fastest. Moreover, there is another kind of observation to be employed, which has not yet come into use, though it be of no small importance. This is, that to the enumeration of things which are should be subjoined an enumeration of things which are not. As in the history of the heavenly bodies, that there is not found any star oblong or triangular, but that every star is globular — either globular simply, as the moon, or apparently angular, but globular in the middle, as the other stars, or apparently radiant but globular in the middle, as the sun — or that the stars are scattered about the sky in no order at all, so that there is not found among them either quincunx or square, or any other regular figure (howsoever the names be given of Delta, Crown, Cross, Chariot, etc.) scarcely so much as a straight line, except perhaps in the belt and dagger of Orion.

Fifthly, that may perhaps be of some assistance to an inquirer which is the ruin and destruction of a believer; viz., a brief review, as in passage, of the opinions now received, with their varieties and sects, that they may touch and rouse the intellect and no more.

X

And this will be enough in the way of general precepts which, if they be diligently observed, the work of the history will at once go straight toward its object and be prevented from increasing beyond bounds. But if even as here circumscribed and limited it should appear to some poor-spirited person a vast work — let him turn to the libraries; and there among other things let him look at the bodies of civil and canonical law on one side, and at the commentaries of doctors and lawyers on the other, and see what a difference there is between the two in point of mass and volume. For we (who as faithful secretaries do but enter and set down the laws themselves of nature and nothing else) are content with brevity, and almost compelled to it by the condition of things; whereas opinions, doctrines, and speculations are without number and without end.

And whereas in the Plan of the Work I have spoken of the *cardinal virtues* in nature, and said that a history of these must also be collected and written before we come to the work of Interpretation, I have not forgotten this, but I reserve this part for myself since until men have begun to be somewhat more closely intimate with nature, I cannot venture to rely very much on other people's industry in that matter.

And now should come the delineation of the particular histories. But I have at present so many other things to do that I can only find time to subjoin a Catalogue of their titles. As soon, however, as I have leisure for it, I mean to draw up a set of questions on the several subjects, and to explain what points with regard to each of the histories are especially to be inquired and collected, as conducing to the end I have in view — like a kind of particular topics. In other words, I mean (according to the practice in civil causes) in this great plea or suit granted by the divine favor and providence (whereby the human race seeks to recover its right over nature), to examine nature herself and the arts upon interrogatories.

CATALOGUE OF PARTICULAR HISTORIES BY TITLES

1. History of the Heavenly Bodies; or Astronomical History.

2. History of the Configuration of the Heaven and the parts thereof toward the Earth and the parts thereof; or Cosmographical History.

3. History of Comets.

4. History of Fiery Meteors.

5. History of Lightnings, Thunderbolts, Thunders, and Coruscations.

6. History of Winds and Sudden Blasts and Undulations of the Air.

7. History of Rainbows.

8. History of Clouds, as they are seen above.

9. History of the Blue Expanse, of Twilight, of Mock-Suns, Mock-Moons, Haloes, various colors of the Sun; and of every variety in the aspect of the heavens caused by the medium.

10. History of Showers, Ordinary, Stormy, and Prodigious; also of Waterspouts (as they are called); and the like.

11. History of Hail, Snow, Frost, Hoar-frost, Fog, Dew, and the like.

12. History of all other things that fall or descend from above, and that are generated in the upper region.

13. History of Sounds in the upper region (if there be any), besides Thunder.

14. History of Air as a whole, or in the Configuration of the World.

15. History of the Seasons or Temperatures of the Year, as well according to the variations of Regions as according to accidents of Times and periods of Years; of Floods, Heats, Droughts, and the like.

16. History of Earth and Sea; of the Shape and Compass of them, and their Configurations compared with each other; and of their broadening or narrowing; of Islands in the Sea; of Gulfs of the Sea, and Salt Lakes within the Land; Isthmuses and Promontories.

17. History of the Motions (if any be) of the Globe of Earth and Sea; and of the Experiments from which such motions may be collected.

18. History of the greater Motions and Perturbations in Earth and Sea; Earthquakes, Tremblings and Yawnings of the Earth, Islands newly appearing; Floating Islands; Breakings off of Land by entrance of the Sea, Encroachments and Inundations and contrariwise Recessions of the Sea; Eruptions of Fire from the Earth; Sudden Eruptions of Waters from the Earth; and the like.

19. Natural History of Geography; of Mountains, Valleys, Woods, Plains, Sands, Marshes, Lakes, Rivers, Torrents, Springs, and every variety of their course, and the like; leaving apart Nations, Provinces, Cities, and such like matters pertaining to Civil life.

20. History of Ebbs and Flows of the Sea; Currents, Undulations, and other Motions of the Sea.

21. History of the other Accidents of the Sea; its Saltness, its various Colors, its Depth; also of Rocks, Mountains and Valleys under the Sea, and the like.

Next come Histories of the Greater Masses.

22. History of Flame and of things Ignited.

23. History of Air, in Substance, not in the Configuration of the World.

24. History of Water, in Substance, not in the Configuration of the World.

25. History of Earth and the diversity thereof, in Substance, not in the Configuration of the World.

Next come Histories of Species.

26. History of perfect Metals, Gold, Silver; and of the Mines, Veins, Marcasites of the same; also of the Working in the Mines.

27. History of Quicksilver.

28. History of Fossils; as Vitriol, Sulphur, *etc.*

29. History of Gems; as the Diamond, the Ruby, *etc.*

30. History of Stones; as Marble, Touchstone, Flint, *etc.*

31. History of the Magnet.

32. History of Miscellaneous Bodies, which are neither entirely Fossil nor Vegetable; as Salts, Amber, Ambergris, *etc.*

33. Chemical History of Metals and Minerals.

34. History of Plants, Trees, Shrubs, Herbs; and of their parts, Roots, Stalks, Wood, Leaves, Flowers, Fruits, Seeds, Gums, *etc.*

35. Chemical History of Vegetables.

36. History of Fishes, and the Parts and Generation of them.

37. History of Birds, and the Parts and Generation of them.

38. History of Quadrupeds, and the Parts and Generation of them.

39. History of Serpents, Worms, Flies, and other insects; and of the Parts and Generation of them.

40. Chemical History of the things which are taken by Animals.

Next come Histories of Man.

41. History of the Figure and External Limbs of Man, his Stature, Frame, Countenance and Features; and of the variety of the same according to Races and Climates, or other smaller differences.

42. Physiognomical History of the same.

43. Anatomical History, or of the Internal Members of Man; and of the variety of them, as it is found in the Natural Frame and Structure, and not merely as regards Diseases and Accidents out of the course of Nature.

44. History of the parts of Uniform Structure in Man; as Flesh, Bones, Membranes, *etc.*

45. History of Humors in Man; Blood, Bile, Seed, *etc.*

46. History of Excrements; Spittle, Urine, Sweats, Stools, Hair of the Head, Hairs of the Body, Whitlows, Nails, and the like.

47. History of Faculties; Attraction, Digestion, Retention, Expulsion, Sanguification, Assimilation of Aliment into the members, conversion of Blood and Flower of Blood into Spirit, *etc.*

48. History of Natural and Involuntary Motions; as Motion of the Heart, the Pulses, Sneezing, Lungs, Erection, *etc.*

49. History of Motions partly Natural and partly Violent; as of Respiration, Cough, Urine, Stool, *etc.*

50. History of Voluntary Motions; as of the Instruments of Articulation of Words; Motions of the Eyes, Tongue, Jaws, Hands, Fingers; of Swallowing, *etc.*

51. History of Sleep and Dreams.

52. History of different habits of Body — Fat, Lean; of the Complexions (as they call them), *etc.*

53. History of the Generation of Man.

54. History of Conception, Vivification, Gestation in the Womb, Birth, *etc.*

55. History of the Food of Man; and of all things Eatable and Drinkable; and of all Diet; and of the variety of the same according to nations and smaller differences.

56. History of the Growth and Increase of the Body, in the whole and in its parts.

57. History of the Course of Age; Infancy, Boyhood, Youth, Old Age; of Length and Shortness of Life, and the like, according to nations and lesser differences.

58. History of Life and Death.

59. History Medicinal of Diseases, and the Symptoms and Signs of them.

60. History Medicinal of the Treatment and Remedies and Cures of Diseases.

61. History Medicinal of those things which preserve the Body and the Health.

62. History Medicinal of those things which relate to the Form and Comeliness of the Body.

63. History Medicinal of those things which alter the Body, and pertain to Alternative Regimen.

64. History of Drugs.

65. History of Surgery.

66. Chemical History of Medicines.

67. History of Vision, and of things Visible.

68. History of Painting, Sculpture, Modelling, *etc.*

69. History of Hearing and Sound.

70. History of Music.

71. History of Smell and Smells.

72. History of Taste and Tastes.

73. History of Touch, and the objects of Touch.

74. History of Venus, as a species of Touch.

75. History of Bodily Pains, as species of Touch.

76. History of Pleasure and Pain in general.

77. History of the Affections; as Anger, Love, Shame, *etc.*

78. History of the Intellectual Faculties; Reflection, Imagination, Discourse, Memory, *etc.*

79. History of Natural Divinations.

80. History of Diagnostics, or Secret Natural Judgments.

81. History of Cookery, and the arts thereto belonging, as of the Butcher, Poulterer, *etc.*

82. History of Baking, and the Making of Bread, and the arts thereto belonging, as of the Miller, *etc.*

83. History of Wine.

84. History of the Cellar and of different kinds of Drink.

85. History of Sweetmeats and Confections.

86. History of Honey.

87. History of Sugar.

88. History of the Dairy.

89. History of Baths and Ointments.

90. Miscellaneous History concerning the care of the body — as of Barbers, Perfumers, *etc.*

91. History of the working of Gold, and the arts thereto belonging.

92. History of the manufactures of Wool, and the arts thereto belonging.

93. History of the manufactures of Silk, and the arts thereto belonging.

94. History of manufactures of Flax, Hemp, Cotton, Hair, and other kinds of Thread, and the arts thereto belonging.

95. History of manufactures of Feathers.

96. History of Weaving, and the arts thereto belonging.

97. History of Dyeing.

98. History of Leather-making, Tanning, and the arts thereto belonging.

99. History of Ticking and Feathers.

100. History of working in Iron.

101. History of Stone-cutting.

102. History of the making of Bricks and Tiles.

103. History of Pottery.

104. History of Cements, *etc.*

105. History of working in Wood.

106. History of working in Lead.

107. History of Glass and all vitreous substances, and of Glass-making.

108. History of Architecture generally.

109. History of Wagons, Chariots, Litters, *etc.*

110. History of Printing, of Books, of Writing, of Sealing; of Ink, Pen, Paper, Parchment, *etc.*

111. History of Wax.

112. History of Basket-making.

113. History of Mat-making, and of manufactures of Straw, Rushes, and the like.

114. History of Washing, Scouring, *etc.*

115. History of Agriculture, Pasturage, Culture of Woods, *etc.*

116. History of Gardening.

117. History of Fishing.

118. History of Hunting and Fowling.

119. History of the Art of War, and of the arts thereto belonging, as Armory, Bow-making, Arrow-making, Musketry, Ordnance, Cross-bows, Machines, *etc.*

120. History of the Art of Navigation, and of the crafts and arts thereto belonging.

121. History of Athletics and Human Exercises of all kinds.

122. History of Horsemanship.

123. History of Games of all kinds.

124. History of Jugglers and Mountebanks.

125. Miscellaneous History of various Artificial Materials, — as Enamel, Porcelain, various Cements, *etc.*

126. History of Salts.

127. Miscellaneous History of various Machines and Motions.

128. Miscellaneous History of Common Experiments which have not grown into an Art.

Histories must also be written of Pure Mathematics; though they are rather observations than experiments.

129. History of the Natures and Powers of Numbers.

130. History of the Natures and Powers of Figures.

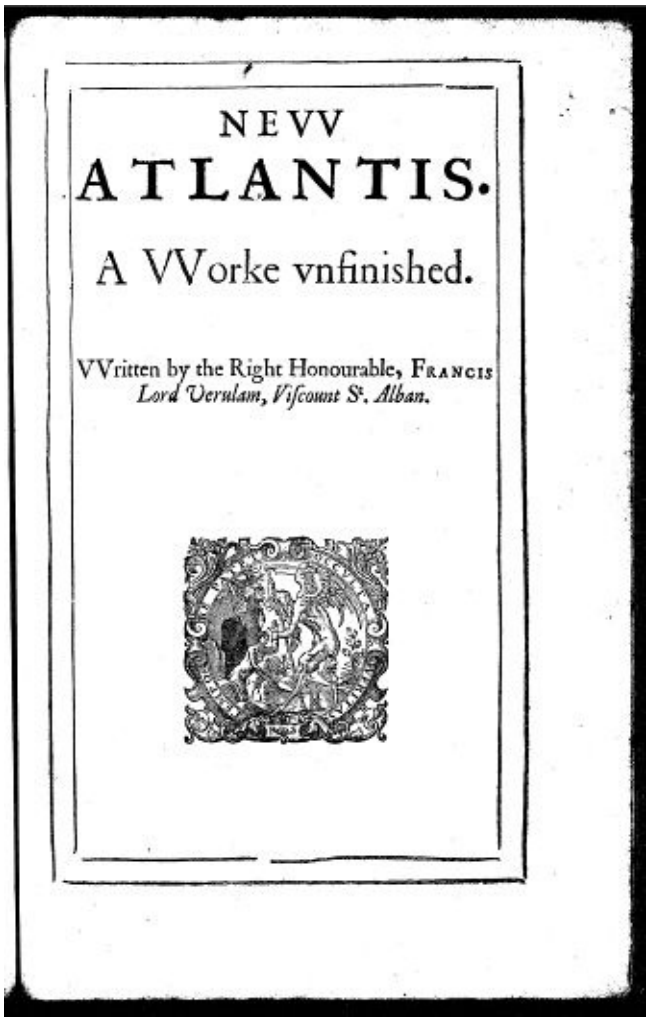
It may not be amiss to observe that, whereas many of the experiments must come under more titles than one (as the history of plants and the history of the art of gardening have many things in common), it will be more convenient to investigate them with reference to arts, and to arrange them with reference to bodies. For I care little about the mechanical arts themselves: only about those things which they contribute to the equipment of philosophy. But these things will be better regulated as the case arises.

New Atlantis

An incomplete utopian work of fiction, first published in 1627, *New Atlantis* concerns a vision of the future of human discovery and knowledge, expressing Bacon's aspirations and ideals for humankind. The text depicts the creation of a utopian land where "generosity and enlightenment, dignity and splendour, piety and public spirit" are the commonly held qualities of the inhabitants of the mythical Bensalem. The narrative describes how the island is discovered by the crew of a European ship after they are lost in the Pacific Ocean, somewhere west of Peru.

Many aspects of the society and history of the island are described, such as the Christian religion – which is reported to have been born there as a copy of the Bible and a letter from the Apostle Saint Bartholomew arrived there miraculously, a few years after the Ascension of Jesus; a cultural feast in honour of the family institution, called "the Feast of the Family"; a college of sages, the Salomon's House, "the very eye of the kingdom", to which order "God of heaven and earth had vouchsafed the grace to know the works of Creation, and the secrets of them", as well as "to discern between divine miracles, works of nature, works of art, and impostures and illusions of all sorts"; and a series of instruments, process and methods of scientific research that were employed in the island by the Salomon's House.

New Atlantis may have been Bacon's vision for a Utopian New World in North America. He portrays a land where there would be freedom of religion – showing a Jew treated fairly and equally in an island of Christians, but it has been debated whether this work had influenced others reforms, such as greater rights for women, the abolition of slavery, elimination of debtors' prisons, separation of church and state, and freedom of political expression, although there is no hint of these reforms in the text itself. The author played a leading role in creating the English colonies, especially in Virginia, the Carolinas, and Newfoundland in north-eastern Canada.


NEVV
ATLANTIS.
A VVorke vnfinished.
VVritten by the Right Honourable, FRANCIS
Lord Verulam, Viſcount St. Alban.

Title page of the 1628 edition

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THE NEW ATLANTIS

INTRODUCTORY NOTE

Bacon's literary executor, Dr. Rowley, published "The New Atlantis" in 1627, the year after the author's death. It seems to have been written about 1623, during that period of literary activity which followed Bacon's political fall. None of Bacon's writings gives in short apace so vivid a picture of his tastes and aspirations as this fragment of the plan of an ideal commonwealth. The generosity and enlightenment, the dignity and splendor, the piety and public spirit, of the inhabitants of Bensalem represent the ideal qualities which Bacon the statesman desired rather than hoped to see characteristic of his own country; and in Solomon's House we have Bacon the scientist indulging without restriction his prophetic vision of the future of human knowledge. No reader acquainted in any degree with the processes and results of modern scientific inquiry can fail to be struck by the numerous approximations made by Bacon's imagination to the actual achievements of modern times. The plan and organization of his great college lay down the main lines of the modern research university; and both in pure and applied science he anticipates a strikingly large number of recent inventions and discoveries. In still another way is "The New Atlantis" typical of Bacon's attitude. In spite of the enthusiastic and broad-minded schemes he laid down for the pursuit of truth, Bacon always had an eye to utility. The advancement of science which he sought was conceived by him as a means to a practical end the increase of man's control over nature, and the comfort and convenience of humanity. For pure metaphysics, or any form of abstract thinking that yielded no "fruit," he had little interest; and this leaning to the useful is shown in the practical applications of the discoveries made by the scholars of Solomon's House. Nor does the interest of the work stop here. It contains much, both in its political and in its scientific ideals, that we have as yet by no means achieved, but which contain valuable elements of suggestion and stimulus for the future.

THE NEW ATLANTIS

We sailed from Peru, (where we had continued for the space of one whole year) for China and Japan, by the South Sea; taking with us victuals for twelve months; and had good winds from the east, though soft and weak, for five months space, and more. But the wind came about, and settled in the west for many days, so as we could make little or no way, and were sometime in purpose to turn back. But then again there arose strong and great winds from the south, with a point east, which carried us up (for all that we could do) towards the north; by which time our victuals failed us, though we had made good spare of them. So that finding ourselves, in the midst of the greatest wilderness of waters in the world, without victuals, we gave ourselves for lost men and prepared for death. Yet we did lift up our hearts and voices to God above, who showeth his wonders in the deep, beseeching him of his mercy, that as in the beginning he discovered the face of the deep, and brought forth dry land, so he would now discover land to us, that we might not perish.

And it came to pass that the next day about evening we saw within a kenning before us, towards the north, as it were thick clouds, which did put us in some hope of land; knowing how that part of the South Sea was utterly unknown; and might have islands, or continents, that hitherto were not come to light. Wherefore we bent our course thither, where we saw the appearance of land, all that night; and in the dawning of the next day, we might plainly discern that it was a land; flat to our sight, and full of boscage; which made it show the more dark. And after an hour and a half's sailing, we entered into a good haven, being the port of a fair city; not great indeed, but well built, and that gave a pleasant view from the sea: and we thinking every minute long, till we were on land, came close to the shore, and offered to land. But straightways we saw divers of the people, with bastons in their hands (as it were) forbidding us to land; yet without any cries of fierceness, but only as warning us off, by signs that they

made. Whereupon being not a little discomforted, we were advising with ourselves, what we should do.

During which time, there made forth to us a small boat, with about eight persons in it; whereof one of them had in his hand a tipstaff of a yellow cane, tipped at both ends with blue, who came aboard our ship, without any show of distrust at all. And when he saw one of our number, present himself somewhat before the rest, he drew forth a little scroll of parchment (somewhat yellower than our parchment, and shining like the leaves of writing tables, but otherwise soft and flexible,) and delivered it to our foremost man. In which scroll were written in ancient Hebrew, and in ancient Greek, and in good Latin of the school, and in Spanish, these words: Land ye not, none of you; and provide to be gone from this coast, within sixteen days, except you have further time given you. Meanwhile, if you want fresh water or victuals, or help for your sick, or that your ship needeth repairs, write down your wants, and you shall have that, which belongeth to mercy. This scroll was signed with a stamp of cherubim: wings, not spread, but hanging downwards; and by them a cross. This being delivered, the officer returned, and left only a servant with us to receive our answer.

Consulting hereupon amongst ourselves, we were much perplexed. The denial of landing and hasty warning us away troubled us much; on the other side, to find that the people had languages, and were so full of humanity, did comfort us not a little. And above all, the sign of the cross to that instrument was to us a great rejoicing, and as it were a certain presage of good. Our answer was in the Spanish tongue; that for our ship, it was well; for we had rather met with calms and contrary winds than any tempests. For our sick, they were many, and in very ill case; so that if they were not permitted to land, they ran danger of their lives. Our other wants we set down in particular; adding, That we had some little store of merchandise, which if it pleased them to deal for, it might supply our wants, without being chargeable unto them. We offered some reward in pistolets unto the servant, and a piece of crimson velvet to be presented to the officer; but the servant took them not, nor would scarce look upon them; and so left us, and went back in another little boat, which was sent for him.

About three hours after we had dispatched our answer, there came towards us a person (as it seemed) of place. He had on him a gown with wide sleeves, of a kind of water chamolet, of an excellent azure colour, fair more glossy than ours; his under apparel was green; and so was his hat, being in the form of a turban, daintily made, and not so huge as the Turkish turbans; and the locks of his hair came down below the brims of it. A reverend man was he to behold. He came in a boat, gilt in some part of it, with four persons more only in that boat; and was followed by another boat, wherein were some twenty. When he was come within a flightshot of our ship, signs were made to us, that we should send forth some to meet him upon the water; which we presently did in our ship-boat, sending the principal man amongst us save one, and four of our number with him.

When we were come within six yards of their boat, they called to us to stay, and not to approach farther; which we did. And thereupon the man, whom I before described, stood up, and with a loud voice, in Spanish, asked, “Are ye Christians?” We answered, “We were;” fearing the less, because of the cross we had seen in the subscription. At which answer the said person lifted up his right hand towards Heaven, and drew it softly to his mouth (which is the gesture they use, when they thank God;) and then said: “If ye will swear (all of you) by the merits of the Saviour, that ye are no pirates, nor have shed blood, lawfully, nor unlawfully within forty days past, you may have licence to come on land.” We said, “We were all ready to take that oath.” Whereupon one of those that were with him, being (as it seemed) a notary, made an entry of this act. Which done, another of the attendants of the great person which was with him in the same boat, after his Lord had spoken a little to him, said aloud: “My Lord would have you know, that it is not of pride, or greatness, that he cometh not aboard your ship; but for that in your answer you declare that you have many sick amongst you, he was warned by the Conservator of Health of the city that he should keep a distance.” We bowed ourselves towards him, and answered, “We were his humble servants; and accounted for great honour, and singular humanity towards us, that which was already done; but hoped well, that the nature of the sickness of our men was not infectious.” So he returned; and a while after came the

Notary to us aboard our ship; holding in his hand a fruit of that country, like an orange, but of color between orange-tawney and scarlet; which cast a most excellent odour. He used it (as it seemeth) for a preservative against infection. He gave us our oath; “By the name of Jesus, and his merits:” and after told us, that the next day, by six of the Clock, in the Morning, we should be sent to, and brought to the Strangers’ House, (so he called it,) where we should be accommodated of things, both for our whole, and for our sick. So he left us; and when we offered him some pistolets, he smiling said, “He must not be twice paid for one labour:” meaning (as I take it) that he had salary sufficient of the State for his service. For (as I after learned) they call an officer that taketh rewards, “twice paid.”

The next morning early, there came to us the same officer that came to us at first with his cane, and told us, He came to conduct us to the Strangers’ House; and that he had prevented the hour, because we might have the whole day before us, for our business. “For,” said he, “if you will follow my advice, there shall first go with me some few of you, and see the place, and how it may be made convenient for you; and then you may send for your sick, and the rest of your number, which ye will bring on land.” We thanked him, and said, “That this care, which he took of desolate strangers, God would reward.” And so six of us went on land with him: and when we were on land, he went before us, and turned to us, and said, “He was but our servant, and our guide.” He led us through three fair streets; and all the way we went, there were gathered some people on both sides, standing in a row; but in so civil a fashion, as if it had been, not to wonder at us, but to welcome us: and divers of them, as we passed by them, put their arms a little abroad; which is their gesture, when they did bid any welcome.

The Strangers’ House is a fair and spacious house, built of brick, of somewhat a bluer colour than our brick; and with handsome windows, some of glass, some of a kind of cambric oiled. He brought us first into a fair parlour above stairs, and then asked us, “What number of persons we were? And how many sick?” We answered, “We were in all, (sick and whole,) one and fifty persons, whereof

our sick were seventeen." He desired us to have patience a little, and to stay till he came back to us; which was about an hour after; and then he led us to see the chambers which were provided for us, being in number nineteen: they having cast it (as it seemeth) that four of those chambers, which were better than the rest, might receive four of the principal men of our company; and lodge them alone by themselves; and the other fifteen chambers were to lodge us two and two together. The chambers were handsome and cheerful chambers, and furnished civilly. Then he led us to a long gallery, like a dorture, where he showed us all along the one side (for the other side was but wall and window), seventeen cells, very neat ones, having partitions of cedar wood. Which gallery and cells, being in all forty, many more than we needed, were instituted as an infirmary for sick persons. And he told us withal, that as any of our sick waxed well, he might be removed from his cell, to a chamber; for which purpose there were set forth ten spare chambers, besides the number we spake of before. This done, he brought us back to the parlour, and lifting up his cane a little, (as they do when they give any charge or command) said to us, "Ye are to know, that the custom of the land requireth, that after this day and to-morrow, (which we give you for removing of your people from your ship,) you are to keep within doors for three days. But let it not trouble you, nor do not think yourselves restrained, but rather left to your rest and ease. You shall want nothing, and there are six of our people appointed to attend you, for any business you may have abroad." We gave him thanks, with all affection and respect, and said, "God surely is manifested in this land." We offered him also twenty pistolets; but he smiled, and only said; "What? twice paid!" And so he left us.

Soon after our dinner was served in; which was right good viands, both for bread and treat: better than any collegiate diet, that I have known in Europe. We had also drink of three sorts, all wholesome and good; wine of the grape; a drink of grain, such as is with us our ale, but more clear: And a kind of cider made of a fruit of that country; a wonderful pleasing and refreshing drink. Besides, there were brought in to us, great store of those scarlet oranges, for our sick; which (they said) were an assured remedy for sickness taken at sea. There was given us

also, a box of small gray, or whitish pills, which they wished our sick should take, one of the pills, every night before sleep; which (they said) would hasten their recovery.

The next day, after that our trouble of carriage and removing of our men and goods out of our ship, was somewhat settled and quiet, I thought good to call our company together; and when they were assembled, said unto them; "My dear friends, let us know ourselves, and how it standeth with us. We are men cast on land, as Jonas was, out of the whale's belly, when we were as buried in the deep: and now we are on land, we are but between death and life; for we are beyond, both the old world, and the new; and whether ever we shall see Europe, God only knoweth. It is a kind of miracle bath brought us hither: and it must be little less, that shall bring us hence. Therefore in regard of our deliverance past, and our danger present, and to come, let us look up to God, and every man reform his own ways. Besides we are come here amongst a Christian people, full of piety and humanity: let us not bring that confusion of face upon ourselves, as to show our vices, or unworthiness before them. Yet there is more. For they have by commandment, (though in form of courtesy) cloistered us within these wall, for three days: who knoweth, whether it be not, to take some taste of our manners and conditions? And if they find them bad, to banish us straightways; if good, to give us further time. For these men that they have given us for attendance, may withal have an eye upon us. Therefore for God's love, and as we love the weal of our souls and bodies, let us so behave ourselves, as we may be at peace with God, and may find grace in the eyes of this people." Our company with one voice thanked me for my good admonition, and promised me to live soberly and civilly, and without giving any the least occasion of offence. So we spent our three days joyfully, and without care, in expectation what would be done with us, when they were expired. During which time, we had every hour joy of the amendment of our sick; who thought themselves cast into some divine pool of healing; they mended so kindly, and so fast.

The morrow after our three days were past, there came to us a new man, that we had not seen before, clothed in blue as the former was, save that his turban

was white, with a small red cross on the top. He had also a tippet of fine linen. At his coming in, he did bend to us a little, and put his arms abroad. We of our parts saluted him in a very lowly and submissive manner; as looking that from him, we should receive sentence of life, or death: he desired to speak with some few of us: whereupon six of us only staid, and the rest avoided the room. He said, "I am by office governor of this House of Strangers, and by vocation I am a Christian priest: and therefore am come to you to offer you my service, both as strangers and chiefly as Christians. Some things I may tell you, which I think you will not be unwilling to hear. The State hath given you license to stay on land, for the space of six weeks; and let it not trouble you, if your occasions ask further time, for the law in this point is not precise; and I do not doubt, but my self shall be able, to obtain for you such further time, as may be convenient. Ye shall also understand, that the Strangers' House is at this time rich, and much aforehand; for it hath laid up revenue these thirty-seven years; for so long it is since any stranger arrived in this part: and therefore take ye no care; the State will defray you all the time you stay; neither shall you stay one day the less for that. As for any merchandise ye have brought, ye shall be well used, and have your return, either in merchandise, or in gold and silver: for to us it is all one. And if you have any other request to make, hide it not. For ye shall find we will not make your countenance to fall by the answer ye shall receive. Only this I must tell you, that none of you must go above a karan," (that is with them a mile and an half) "from the walls of the city, without especial leave."

We answered, after we had looked awhile one upon another, admiring this gracious and parent-like usage; "That we could not tell what to say: for we wanted words to express our thanks; and his noble free offers left us nothing to ask. It seemed to us, that we had before us a picture of our salvation in Heaven; for we that were a while since in the jaws of death, were now brought into a place, where we found nothing but consolations. For the commandment laid upon us, we would not fail to obey it, though it was impossible but our hearts should be enflamed to tread further upon this happy and holy ground." We added, "That our tongues should first cleave to the roofs of our mouths, ere we

should forget, either his reverend person, or this whole nation, in our prayers." We also most humbly besought him, to accept of us as his true servants; by as just a right as ever men on earth were bounden; laying and presenting, both our persons, and all we had, at his feet. He said; "He was a priest, and looked for a priest's reward; which was our brotherly love, and the good of our souls and bodies." So he went from us, not without tears of tenderness in his eyes; and left us also confused with joy and kindness, saying amongst ourselves; "That we were come into a land of angels, which did appear to us daily, and prevent us with comforts, which we thought not of, much less expected."

The next day about ten of the clock, the Governor came to us again, and after salutations, said familiarly; "That he was come to visit us;" and called for a chair, and sat him down: and we, being some ten of us, (the rest were of the meaner sort, or else gone abroad,) sat down with him, And when we were set, he began thus: "We of this island of Bensalem," (for so they call it in their language,) "have this; that by means of our solitary situation; and of the laws of secrecy, which we have for our travellers, and our rare admission of strangers; we know well most part of the habitable world, and are ourselves unknown. Therefore because he that knoweth least is fittest to ask questions, it is more reason, for the entertainment of the time, that ye ask me questions, than that I ask you."

We answered; "That we humbly thanked him that he would give us leave so to do: and that we conceived by the taste we had already, that there was no worldly thing on earth, more worthy to be known than the state of that happy land. But above all," (we said,) "since that we were met from the several ends of the world, and hoped assuredly that we should meet one day in the kingdom of Heaven, (for that we were both parts Christians,) we desired to know, (in respect that land was so remote, and so divided by vast and unknown seas, from the land where our Saviour walked on earth,) who was the apostle of that nation, and how it was converted to the faith?" It appeared in his face that he took great contentment in this our question: he said; "Ye knit my heart to you, by asking

this question in the first place; for it sheweth that you first seek the kingdom of heaven; and I shall gladly, and briefly, satisfy your demand.

"About twenty years after the ascension of our Saviour, it came to pass, that there was seen by the people of Renfusa, (a city upon the eastern coast of our island,) within night, (the night was cloudy, and calm,) as it might be some mile into the sea, a great pillar of light; not sharp, but in form of a column, or cylinder, rising from the sea a great way up towards heaven; and on the top of it was seen a large cross of light, more bright and resplendent than the body of the pillar. Upon which so strange a spectacle, the people of the city gathered apace together upon the sands, to wonder; and so after put themselves into a number of small boats, to go nearer to this marvellous sight. But when the boats were come within (about) sixty yards of the pillar, they found themselves all bound, and could go no further; yet so as they might move to go about, but might not approach nearer: so as the boats stood all as in a theatre, beholding this light as an heavenly sign. It so fell out, that there was in one of the boats one of the wise men, of the society of Salomon's House; which house, or college (my good brethren) is the very eye of this kingdom; who having awhile attentively and devoutly viewed and contemplated this pillar and cross, fell down upon his face; and then raised himself upon his knees, and lifting up his hands to heaven, made his prayers in this manner.

"'LORD God of heaven and earth, thou hast vouchsafed of thy grace to those of our order, to know thy works of Creation, and the secrets of them: and to discern (as far as appertaineth to the generations of men) between divine miracles, works of nature, works of art, and impostures and illusions of all sorts. I do here acknowledge and testify before this people, that the thing which we now see before our eyes is thy Finger and a true Miracle. And forasmuch as we learn in our books that thou never workest miracles, but to divine and excellent end, (for the laws of nature are thine own laws, and thou exceedest them not but upon great cause,) we most humbly beseech thee to prosper this great sign, and to give us the interpretation and use of it in mercy; which thou dost in some part secretly promise by sending it unto us.'

“When he had made his prayer, he presently found the boat he was in, moveable and unbound; whereas all the rest remained still fast; and taking that for an assurance of leave to approach, he caused the boat to be softly and with silence rowed towards the pillar. But ere he came near it, the pillar and cross of light brake up, and cast itself abroad, as it were, into a firmament of many stars; which also vanished soon after, and there was nothing left to be seen, but a small ark, or chest of cedar, dry, and not wet at all with water, though it swam. And in the fore-end of it, which was towards him, grew a small green branch of palm; and when the wise man had taken it, with all reverence, into his boat, it opened of itself, and there were found in it a Book and a Letter; both written in fine parchment, and wrapped in sindons of linen. The Book contained all the canonical books of the Old and New Testament, according as you have them; (for we know well what the churches with you receive); and the Apocalypse itself, and some other books of the New Testament, which were not at that time written, were nevertheless in the Book. And for the Letter, it was in these words:

“‘I, Bartholomew, a servant of the Highest, and Apostle of Jesus Christ, was warned by an angel that appeareth to me, in a vision of glory, that I should commit this ark to the floods of the sea. Therefore I do testify and declare unto that people where God shall ordain this ark to come to land, that in the same day is come unto them salvation and peace and good-will, from the Father, and from the Lord Jesus.’

“There was also in both these writings, as well the Book, as the Letter, wrought a great miracle, conform to that of the Apostles, in the original Gift of Tongues. For there being at that time in this land Hebrews, Persians, and Indians, besides the natives, every one read upon the Book, and Letter, as if they had been written in his own language. And thus was this land saved from infidelity (as the remainder of the old world was from water) by an ark, through the apostolical and miraculous evangelism of Saint Bartholomew.” And here he paused, and a messenger came, and called him from us. So this was all that passed in that conference.

The next day, the same governor came again to us, immediately after dinner, and excused himself, saying; “That the day before he was called from us, somewhat abruptly, but now he would make us amends, and spend time with us if we held his company and conference agreeable.” We answered, “That we held it so agreeable and pleasing to us, as we forgot both dangers past and fears to come, for the time we hear him speak; and that we thought an hour spent with him, was worth years of our former life.” He bowed himself a little to us, and after we were set again, he said; “Well, the questions are on your part.”

One of our number said, after a little pause; that there was a matter, we were no less desirous to know, than fearful to ask, lest we might presume too far. But encouraged by his rare humanity towards us, (that could scarce think ourselves strangers, being his vowed and professed servants,) we would take the hardiness to propound it: humbly beseeching him, if he thought it not fit to be answered, that he would pardon it, though he rejected it. We said; “We well observed those his words, which he formerly spake, that this happy island, where we now stood, was known to few, and yet knew most of the nations of the world; which we found to be true, considering they had the languages of Europe, and knew much of our state and business; and yet we in Europe, (notwithstanding all the remote discoveries and navigations of this last age), never heard of the least inkling or glimpse of this island. This we found wonderful strange; for that all nations have inter-knowledge one of another, either by voyage into foreign parts, or by strangers that come to them: and though the traveller into a foreign country, doth commonly know more by the eye, than he that stayeth at home can by relation of the traveller; yet both ways suffice to make a mutual knowledge, in some degree, on both parts. But for this island, we never heard tell of any ship of theirs that had been seen to arrive upon any shore of Europe; nor of either the East or West Indies; nor yet of any ship of any other part of the world, that had made return from them. And yet the marvel rested not in this. For the situation of it (as his lordship said) in the secret conclave’ of such a vast sea might cause it. But then, that they should have knowledge of the languages, books, affairs, of those that lie such a distance from them, it was a thing we could not tell what to make of;

for that it seemed to us a conditioner and propriety of divine powers and beings, to be hidden and unseen to others, and yet to have others open and as in a light to them."

At this speech the Governor gave a gracious smile, and said; "That we did well to ask pardon for this question we now asked: for that it imported, as if we thought this land, a land of magicians, that sent forth spirits of the air into all parts, to bring them news and intelligence of other countries." It was answered by us all, in all possible humbleness, but yet with a countenance taking knowledge, that we knew that he spake it but merrily, "That we were apt enough to think there was somewhat supernatural in this island; but yet rather as angelical than magical. But to let his lordship know truly what it was that made us tender and doubtful to ask this question, it was not any such conceit, but because we remembered, he had given a touch in his former speech, that this land had laws of secrecy touching strangers." To this he said; "You remember it aright and therefore in that I shall say to you, I must reserve some particulars, which it is not lawful for me to reveal; but there will be enough left, to give you satisfaction."

"You shall understand (that which perhaps you will scarce think credible) that about three thousand years ago, or somewhat more, the navigation of the world, (especially for remote voyages,) was greater than at this day. Do not think with yourselves, that I know not how much it is increased with you, within these six-score years: I know it well: and yet I say greater then than now; whether it was, that the example of the ark, that saved the remnant of men from the universal deluge, gave men confidence to adventure upon the waters; or what it was; but such is the truth. The Phoenicians, and especially the Tyrians, had great fleets. So had the Carthaginians their colony, which is yet further west. Toward the east the shipping of Egypt and of Palestine was likewise great. China also, and the great Atlantis, (that you call America,) which have now but junks and canoes, abounded then in tall ships. This island, (as appeareth by faithful registers of those times,) had then fifteen hundred strong ships, of great content. Of all this,

there is with you sparing memory, or none; but we have large knowledge thereof.

“At that time, this land was known and frequented by the ships and vessels of all the nations before named. And (as it cometh to pass) they had many times men of other countries, that were no sailors, that came with them; as Persians, Chaldeans, Arabians; so as almost all nations of might and fame resorted hither; of whom we have some stirps, and little tribes with us at this day. And for our own ships, they went sundry voyages, as well to your straits, which you call the Pillars of Hercules, as to other parts in the Atlantic and Mediterrane Seas; as to Paguin, (which is the same with Cambaline,) and Quinzy, upon the Oriental Seas, as far as to the borders of the East Tartary.

“At the same time, and an age after, or more, the inhabitants of the great Atlantis did flourish. For though the narration and description, which is made by a great man with you; that the descendants of Neptune planted there; and of the magnificent temple, palace, city, and hill; and the manifold streams of goodly navigable rivers, (which as so many chains environed the same site and temple); and the several degrees of ascent, whereby men did climb up to the same, as if it had been a scala coeli, be all poetical and fabulous: yet so much is true, that the said country of Atlantis, as well that of Peru, then called Coya, as that of Mexico, then named Tyrambel, were mighty and proud kingdoms in arms, shipping and riches: so mighty, as at one time (or at least within the space of ten years) they both made two great expeditions; they of Tyrambel through the Atlantic to the Mediterrane Sea; and they of Coya through the South Sea upon this our island: and for the former of these, which was into Europe, the same author amongst you (as it seemeth) had some relation from the Egyptian priest whom he cited. For assuredly such a thing there was. But whether it were the ancient Athenians that had the glory of the repulse and resistance of those forces, I can say nothing: but certain it is, there never came back either ship or man from that voyage. Neither had the other voyage of those of Coya upon us had better fortune, if they had not met with enemies of greater clemency. For the king of this island, (by name Altabin,) a wise man and a great warrior, knowing

well both his own strength and that of his enemies, handled the matter so, as he cut off their land-forces from their ships; and entoiled both their navy and their tamp with a greater power than theirs, both by sea and land: arid compelled them to render themselves without striking stroke and after they were at his mercy, contenting himself only with their oath that they should no more bear arms against him, dismissed them all in safety.

"But the divine revenge overtook not long after those proud enterprises. For within less than the space of one hundred years, the great Atlantis was utterly lost and destroyed: not by a great earthquake, as your man saith; (for that whole tract is little subject to earthquakes;) but by a particular' deluge or inundation; those countries having, at this day, far greater rivers and far higher mountains to pour down waters, than any part of the old world. But it is true that the same inundation was not deep; not past forty foot, in most places, from the ground; so that although it destroyed man and beast generally, yet some few wild inhabitants of the wood escaped. Birds also were saved by flying to the high trees and woods. For as for men, although they had buildings in many places, higher than the depth of the water, yet that inundation, though it were shallow, had a long continuance; whereby they of the vale that were not drowned, perished for want of food and other things necessary.

"So as marvel you not at the thin population of America, nor at the rudeness and ignorance of the people; for you must account your inhabitants of America as a young people; younger a thousand years, at the least, than the rest of the world: for that there was so much time between the universal flood and their particular inundation. For the poor remnant of human seed, which remained in their mountains, peopled the country again slowly, by little and little; and being simple and savage people, (not like Noah and his sons, which was the chief family of the earth;) they were not able to leave letters, arts, and civility to their posterity; and having likewise in their mountainous habitations been used (in respect of the extreme cold of those regions) to clothe themselves with the skins of tigers, bears, and great hairy goats, that they have in those parts; when after they came down into the valley, and found the intolerable heats which are there,

and knew no means of lighter apparel, they were forced to begin the custom of going naked, which continueth at this day. Only they take great pride and delight in the feathers of birds; and this also they took from those their ancestors of the mountains, who were invited unto it by the infinite flights of birds that came up to the high grounds, while the waters stood below. So you see, by this main accident of time, we lost our traffic with the Americans, with whom of, all others, in regard they lay nearest to us, we had most commerce.

"As for the other parts of the world, it is most manifest that in the ages following (whether it were in respect of wars, or by a natural revolution of time,) navigation did every where greatly decay; and specially far voyages (the rather by the use of galleys, and such vessels as could hardly brook the ocean,) were altogether left and omitted. So then, that part of intercourse which could be from other nations to sail to us, you see how it hath long since ceased; except it were by some rare accident, as this of yours. But now of the cessation of that other part of intercourse, which might be by our sailing to other nations, I must yield you some other cause. For I cannot say (if I shall say truly,) but our shipping, for number, strength, mariners, pilots, and all things that appertain to navigation, is as great as ever; and therefore why we should sit at home, I shall now give you an account by itself: and it will draw nearer to give you satisfaction to your principal question.

"There reigned in this land, about nineteen hundred years ago, a king, whose memory of all others we most adore; not superstitiously, but as a divine instrument, though a mortal man; his name was Solamona: and we esteem him as the lawgiver of our nation. This king had a large heart, inscrutable for good; and was wholly bent to make his kingdom and people happy. He therefore, taking into consideration how sufficient and substantive this land was to maintain itself without any aid (at all) of the foreigner; being five thousand six hundred miles in circuit, and of rare fertility of soil in the greatest part thereof; and finding also the shipping of this country might be plentifully set on work, both by fishing and by transportations from port to port, and likewise by sailing unto some small islands that are not far from us, and are under the crown and

laws of this state; and, recalling into his memory the happy and flourishing estate wherein this land then was; so as it might be a thousand ways altered to the worse, but scarce any one way to the better; thought nothing wanted to his noble and heroical intentions, but only (as far as human foresight might reach) to give perpetuity to that which was in his time so happily established. Therefore amongst his other fundamental laws of this kingdom, he did ordain the interdicts and prohibitions which we have touching entrance of strangers; which at that time (though it was after the calamity of America) was frequent; doubting novelties, and commixture of manners. It is true, the like law against the admission of strangers without licence is an ancient law in the kingdom of China, and yet continued in use. But there it is a poor thing; and hath made them a curious, ignorant, fearful, foolish nation. But our lawgiver made his law of another temper. For first, he hath preserved all points of humanity, in taking order and making provision for the relief of strangers distressed; whereof you have tasted."

At which speech (as reason was) we all rose up and bowed ourselves. He went on.

"That king also, still desiring to join humanity and policy together; and thinking it against humanity, to detain strangers here against their wills, and against policy that they should return and discover their knowledge of this estate, he took this course: he did ordain that of the strangers that should be permitted to land, as many (at all times) might depart as would; but as many as would stay should have very good conditions and means to live from the state. Wherein he saw so far, that now in so many ages since the prohibition, we have memory not of one ship that ever returned, and but of thirteen persons only, at several times, that chose to return in our bottoms. What those few that returned may have reported abroad I know not. But you must think, whatsoever they have said could be taken where they came but for a dream. Now for our travelling from henna into parts abroad, our Lawgiver thought fit altogether to restrain it. So is it not in China. For the Chinese sail where they will or can; which sheweth that their law of keeping out strangers is a law of pusillanimity and fear. But this

restraint of ours hath one only exception, which is admirable; preserving the good which cometh by communicating with strangers, and avoiding the hurt; and I will now open it to you. And here I shall seem a little to digress, but you will by and by find it pertinent.

"Ye shall understand (my dear friends) that amongst the excellent acts of that king, one above all hath the pre-eminence. It was the erection and institution of an Order or Society, which we call Salomon's House; the noblest foundation (as we think) that ever was upon the earth; and the lanthorn of this kingdom. It is dedicated to the study of the works and creatures of God. Some think it beareth the founder's name a little corrupted, as if it should be Solamona's House. But the records write it as it is spoken. So as I take it to be denominate of the king of the Hebrews, which is famous with you, and no stranger to us. For we have some parts of his works, which with you are lost; namely, that natural history, which he wrote, of all plants, from the cedar of Libanus to the moss that groweth out of the wall, and of all things that have life and motion. This maketh me think that our king, finding himself to symbolize in many things with that king of the Hebrews (which lived many years before him), honored him with the title of this foundation. And I am rather induced to be of this opinion, for that I find in ancient records this Order or Society is sometimes called Salomon's House, and sometimes the College of the Six Days Works; whereby I am satisfied that our excellent king had learned from the Hebrews that God had created the world and all that therein is within six days: and therefore he instituting that House for the finding out of the true nature of all things, (whereby God might have the more glory in the workmanship of them, and insert the more fruit in the use of them), did give it also that second name.

"But now to come to our present purpose. When the king had forbidden to all his people navigation into any part that was not under his crown, he made nevertheless this ordinance; that every twelve years there should be set forth, out of this kingdom two ships, appointed to several voyages; That in either of these ships there should be a mission of three of the Fellows or Brethren of Salomon's House; whose errand was only to give us knowledge of the affairs and state of

those countries to which they were designed, and especially of the sciences, arts, manufactures, and inventions of all the world; and withal to bring unto us books, instruments, and patterns in every kind: That the ships, after they had landed the brethren, should return; and that the brethren should stay abroad till the new mission. These ships are not otherwise fraught, than with store of victuals, and good quantity of treasure to remain with the brethren, for the buying of such things and rewarding of such persons as they should think fit. Now for me to tell you how the vulgar sort of mariners are contained from being discovered at land; and how they that must be put on shore for any time, color themselves under the names of other nations; and to what places these voyages have been designed; and what places of rendezvous are appointed for the new missions; and the like circumstances of the practique; I may not do it: neither is it much to your desire. But thus you see we maintain a trade not for gold, silver, or jewels; nor for silks; nor for spices; nor any other commodity of matter; but only for God's first creature, which was Light: to have light (I say) of the growth of all parts of the world."

And when he had said this, he was silent; and so were we all. For indeed we were all astonished to hear so strange things so probably told. And he, perceiving that we were willing to say somewhat but had it not ready in great courtesy took us off, and descended to ask us questions of our voyage and fortunes and in the end concluded, that we might do well to think with ourselves what time of stay we would demand of the state; and bade us not to scant ourselves; for he would procure such time as we desired: Whereupon we all rose up, and presented ourselves to kiss the skirt of his tippet; but he would not suffer us; and so took his leave. But when it came once amongst our people that the state used to offer conditions to strangers that would stay, we had work enough to get any of our men to look to our ship; and to keep them from going presently to the governor to crave conditions. But with much ado we refrained them, till we might agree what course to take.

We took ourselves now for free men, seeing there was no danger of our utter perdition; and lived most joyfully, going abroad and seeing what was to be seen

in the city and places adjacent within our tedder; and obtaining acquaintance with many of the city, not of the meanest quality; at whose hands we found such humanity, and such a freedom and desire to take strangers as it were into their bosom, as was enough to make us forget all that was dear to us in our own countries: and continually we met with many things right worthy of observation and relation: as indeed, if there be a mirror in the world worthy to hold men's eyes, it is that country.

One day there were two of our company bidden to a Feast of the Family, as they call it. A most natural, pious, and reverend custom it is, shewing that nation to be compounded of all goodness. This is the manner of it. It is granted to any man that shall live to see thirty persons descended of his body alive together, and all above three years old, to make this feast which is done at the cost of the state. The Father of the Family, whom they call the Tirsan, two days before the feast, taketh to him three of such friends as he liketh to choose; and is assisted also by the governor of the city or place where the feast is celebrated; and all the persons of the family, of both sexes, are summoned to attend him. These two days the Tirsan sitteth in consultation concerning the good estate of the family. There, if there be any discord or suits between any of the family, they are compounded and appeased. There, if any of the family be distressed or decayed, order is taken for their relief and competent means to live. There, if any be subject to vice, or take ill courses, they are reproved and censured. So likewise direction is given touching marriages, and the courses of life, which any of them should take, with divers other the like orders and advices. The governor assisteth, to the end to put in execution by his public authority the decrees and orders of the Tirsan, if they should be disobeyed; though that seldom needeth; such reverence and obedience they give to the order of nature. The Tirsan doth also then ever choose one man from among his sons, to live in house with him; who is called ever after the Son of the Vine. The reason will hereafter appear.

On the feast day, the father or Tirsan cometh forth after divine service into a large room where the feast is celebrated; which room hath an half-pace at the upper end. Against the wall, in the middle of the half-pace, is a chair placed for

him, with a table and carpet before it. Over the chair is a state, made round or oval, and it is of ivy; an ivy somewhat whiter than ours, like the leaf of a silver asp; but more shining; for it is green all winter. And the state is curiously wrought with silver and silk of divers colors, broiding or binding in the ivy; and is ever of the work of some of the daughters of the family; and veiled over at the top with a fine net of silk and silver. But the substance of it is true ivy; whereof, after it is taken down, the friends of the family are desirous to have some leaf or sprig to keep.

The Tirsan cometh forth with all his generation or linage, the males before him, and the females following him; and if there be a mother from whose body the whole linage is descended, there is a traverse placed in a loft above on the right hand of the chair, with a privy door, and a carved window of glass, leaded with gold and blue; where she sitteth, but is not seen. When the Tirsan is come forth, he sitteth down in the chair; and all the linage place themselves against the wall, both at his back and upon the return of the half-pace, in order of their years without difference of sex; and stand upon their feet. When he is set; the room being always full of company, but well kept and without disorder; after some pause, there cometh in from the lower end of the room, a taratan (which is as much as an herald) and on either side of him two young lads; whereof one carrieth a scroll of their shining yellow parchment; and the other a cluster of grapes of gold, with a long foot or stalk. The herald and children are clothed with mantles of sea-water green satin; but the herald's mantle is streamed with gold, and hath a train.

Then the herald with three curtesies, or rather inclinations, cometh up as far as the half-pace; and there first taketh into his hand the scroll. This scroll is the king's charter, containing gifts of revenew, and many privileges, exemptions, and points of honour, granted to the Father of the Family; and is ever styled and directed, To such do one our well beloved friend and creditor: which is a title proper only to this case. For they say the king is debtor to no man, but for propagation of his subjects. The seal set to the king's charter is the king's image, imbossed or moulded in gold; and though such charters be expedited of course,

and as of right, yet they are varied by discretion, according to the number and dignity of the family. This charter the herald readeth aloud; and while it is read, the father or Tirsan standeth up supported by two of his sons, such as he chooseth. Then the herald mounteth the half-pace and delivereth the charter into his hand: and with that there is an acclamation by all that are present in their language, which is thus much: Happy are the people of Bensalem.

Then the herald taketh into his hand from the other child the cluster of grapes, which is of gold, both the stalk and the grapes. But the grapes are daintily enamelled; and if the males of the family be the greater number, the grapes are enamelled purple, with a little sun set on the top; if the females, then they are enamelled into a greenish yellow, with a crescent on the top. The grapes are in number as many as there are descendants of the family. This golden cluster the herald delivereth also to the Tirsan; who presently delivereth it over to that son that he had formerly chosen to be in house with him: who beareth it before his father as an ensign of honour when he goeth in public, ever after; and is thereupon called the Son of the Vine.

After the ceremony endeth the father or Tirsan retireth; and after some time cometh forth again to dinner, where he sitteth alone under the state, as before; and none of his descendants sit with him, of what degree or dignity soever, except he hap to be of Salomon's House. He is served only by his own children, such as are male; who perform unto him all service of the table upon the knee; and the women only stand about him, leaning against the wall. The room below the half-pace hath tables on the sides for the guests that are bidden; who are served with great and comely order; and towards the end of dinner (which in the greatest feasts with them lasteth never above an hour and an half) there is an hymn sung, varied according to the invention of him that composeth it (for they have excellent posy) but the subject of it is (always) the praises of Adam and Noah and Abraham; whereof the former two peopled the world, and the last was the Father of the Faithful: concluding ever with a thanksgiving for the nativity of our Saviour, in whose birth the births of all are only blessed.

Dinner being done, the Tirsan retireth again; and having withdrawn himself alone into a place, where he makes some private prayers, he cometh forth the third time, to give the blessing with all his descendants, who stand about him as at the first. Then he calleth them forth by one and by one, by name, as he pleaseth, though seldom the order of age be inverted. The person that is called (the table being before removed) kneeleth down before the chair, and the father layeth his hand upon his head, or her head, and giveth the blessing in these words: Son of Bensalem, (or daughter of Bensalem,) thy father with it: the man by whom thou hast breath and life speaketh the word: the blessing of the everlasting Father, the Prince of Peace, and the Holy Dove, be upon thee, and make the days of thy pilgrimage good and many. This he saith to every of them; and that done, if there be any of his sons of eminent merit and virtue, (so they be not above two,) he calleth for them again; and saith, laying his arm over their shoulders, they standing; Sons, it is well ye are born, give God the praise, and persevere to the end. And withall delivereth to either of them a jewel, made in the figure of an ear of wheat, which they ever after wear in the front of their turban or hat. This done, they fall to music and dances, and other recreations, after their manner, for the rest of the day. This is the full order of that feast.

By that time six or seven days were spent, I was fallen into straight acquaintance with a merchant of that city, whose name was Joabin. He was a Jew and circumcised: for they have some few stirps of Jews yet remaining among them, whom they leave to their own religion. Which they may the better do, because they are of a far differing disposition from the Jews in other parts. For whereas they hate the name of Christ; and have a secret inbred rancour against the people among whom they live: these (contrariwise) give unto our Saviour many high attributes, and love the nation of Bensalem extremely. Surely this man of whom I speak would ever acknowledge that Christ was born of a virgin and that he was more than a man; and he would tell how God made him ruler of the seraphims which guard his throne; and they call him also the Milken Way, and the Eliah of the Messiah; and many other high names; which though

they be inferior to his divine majesty, yet they are far from the language of other Jews.

And for the country of Bensalem, this man would make no end of commending it; being desirous, by tradition among the Jews there, to have it believed that the people thereof were of the generations of Abraham, by another son, whom they call Nachoran; and that Moses by a secret Cabala ordained the Laws of Bensalem which they now use; and that when the Messiah should come, and sit in his throne at Hierusalem, the king of Bensalem should sit at his feet, whereas other kings should keep a great distance. But yet setting aside these Jewish dreams, the man was a wise man, and learned, and of great policy, and excellently seen in the laws and customs of that nation.

Amongst other discourses, one day I told him I was much affected with the relation I had, from some of the company, of their custom, in holding the Feast of the Family; for that (methought) I had never heard of a solemnity wherein nature did so much preside. And because propagation of families proceedeth from the nuptial copulation, I desired to know of him what laws and customs they had concerning marriage; and whether they kept marriage well and whether they were tied to one wife; for that where population is so much affected,' and such as with them it seemed to be, there is commonly permission of plurality of wives.

To this he said, "You have reason for to commend that excellent institution of the Feast of the Family. And indeed we have experience that those families that are partakers of the blessing of that feast do flourish and prosper ever after in an extraordinary manner. But hear me now, and I will tell you what I know. You shall understand that there is not under the heavens so chaste a nation as this of Bensalem; nor so free from all pollution or foulness. It is the virgin of the world. I remember I have read in one of your European books, of an holy hermit amongst you that desired to see the Spirit of Fornication; and there appeared to him a little foul ugly Aethiop. But if he had desired to see the Spirit of Chastity of Bensalem, it would have appeared to him in the likeness of a fair beautiful Cherubim. For there is nothing amongst mortal men more fair and admirable,

than the chaste minds of this people. Know therefore, that with them there are no stews, no dissolute houses, no courtesans, nor anything of that kind. Nay they wonder (with detestation) at you in Europe, which permit such things. They say ye have put marriage out of office: for marriage is ordained a remedy for unlawful concupiscence; and natural concupiscence seemeth as a spar to marriage. But when men have at hand a remedy more agreeable to their corrupt will, marriage is almost expulsed. And therefore there are with you seen infinite men that marry not, but chose rather a libertine and impure single life, than to be yoked in marriage; and many that do marry, marry late, when the prime and strength of their years is past. And when they do marry, what is marriage to them but a very bargain; wherein is sought alliance, or portion, or reputation, with some desire (almost indifferent) of issue; and not the faithful nuptial union of man and wife, that was first instituted. Neither is it possible that those that have cast away so basely so much of their strength, should greatly esteem children, (being of the same matter,) as chaste men do. So likewise during marriage, is the case much amended, as it ought to be if those things were tolerated only for necessity? No, but they remain still as a very affront to marriage. The haunting of those dissolute places, or resort to courtesans, are no more punished in married men than in bachelors. And the depraved custom of change, and the delight in meretricious embracements, (where sin is turned into art,) maketh marriage a dull thing, and a kind of imposition or tax. They hear you defend these things, as done to avoid greater evils; as advoutries, deflowering of virgins, unnatural lust, and the like. But they say this is a preposterous wisdom; and they call it Lot's offer, who to save his guests from abusing, offered his daughters: nay they say farther that there is little gained in this; for that the same vices and appetites do still remain and abound; unlawful lust being like a furnace, that if you stop the flames altogether, it will quench; but if you give it any vent, it will rage. As for masculine love, they have no touch of it; and yet there are not so faithful and inviolate friendships in the world again as are there; and to speak generally, (as I said before,) I have not read of any such chastity, in any people as theirs. And their usual saying is, That whosoever is unchaste cannot reverence

himself; and they say, That the reverence of a man's self, is, next to religion, the chiefest bridle of all vices."

And when he had said this, the good Jew paused a little; whereupon I, far more willing to hear him speak on than to speak myself, yet thinking it decent that upon his pause of speech I should not be altogether silent, said only this; "That I would say to him, as the widow of Sarepta said to Elias; that he was come to bring to memory our sins; and that I confess the righteousness of Bensalem was greater than the righteousness of Europe." At which speech he bowed his head, and went on in this manner:

"They have also many wise and excellent laws touching marriage. They allow no polygamy. They have ordained that none do intermarry or contract, until a month be past from their first interview. Marriage without consent of parents they do not make void, but they mulct it in the inheritors: for the children of such marriages are not admitted to inherit above a third part of their parents' inheritance. I have read in a book of one of your men, of a Feigned Commonwealth, where the married couple are permitted, before they contract, to see one another naked. This they dislike; for they think it a scorn to give a refusal after so familiar knowledge: but because of many hidden defects in men and women's bodies, they have a more civil way; for they have near every town a couple of pools, (which they call Adam and Eve's pools,) where it is permitted to one of the friends of the men, and another of the friends of the woman, to see them severally bathe naked."

And as we were thus in conference, there came one that seemed to be a messenger, in a rich huke, that spake with the Jew: whereupon he turned to me and said; "You will pardon me, for I am commanded away in haste." The next morning he came to me again, joyful as it seemed, and said; "There is word come to the Governor of the city, that one of the Fathers of Salomon's House will be here this day seven-night: we have seen none of them this dozen years. His coming is in state; but the cause of his coming is secret. I will provide you and your fellows of a good standing to see his entry." I thanked him, and told him, I was most glad of the news.

The day being come, he made his entry. He was a man of middle stature and age, comely of person, and had an aspect as if he pitied men. He was clothed in a robe of fine black cloth, with wide sleeves and a cape. His under garment was of excellent white linen down to the foot, girt with a girdle of the same; and a sindon or tippet of the same about his neck. He had gloves, that were curious,'' and set with stone; and shoes of peach-coloured velvet. His neck was bare to the shoulders. His hat was like a helmet, or Spanish montera; and his locks curled below it decently: they were of colour brown. His beard was cut round, and of the same colour with his hair, somewhat lighter. He was carried in a rich chariot without wheels, litter-wise; with two horses at either end, richly trapped in blue velvet embroidered; and two footmen on each side in the like attire. The chariot was all of cedar, gilt, and adorned with crystal; save that the fore-end had panels of sapphires, set in borders of gold; and the hinder-end the like of emeralds of the Peru colour. There was also a sun of gold, radiant, upon the top, in the midst; and on the top before, a small cherub of gold, with wings displayed. The chariot was covered with cloth of gold tissued upon blue. He had before him fifty attendants, young men all, in white satin loose coats to the mid leg; and stockings of white silk; and shoes of blue velvet; and hats of blue velvet; with fine plumes of diverse colours, set round like hat-bands. Next before the chariot, went two men, bare-headed, in linen garments down the foot, girt, and shoes of blue velvet; who carried, the one a crosier, the other a pastoral staff like a sheep-hook; neither of them of metal, but the crosier of balm-wood, the pastoral staff of cedar. Horsemen he had none, neither before nor behind his chariot: as it seemeth, to avoid all tumult and trouble. Behind his chariot went all the officers and principals of the companies of the city. He sat alone, upon cushions of a kind of excellent plush, blue; and under his foot curious carpets of silk of diverse colours, like the Persian, but far finer. He held up his bare hand as he went, as blessing the people, but in silence. The street was wonderfully well kept: so that there was never any army had their men stand in better battle-array than the people stood. The windows likewise were not crowded, but every one stood in them as if they had been placed.

When the shew was past, the Jew said to me; “I shall not be able to attend you as I would, in regard of some charge the city hath laid upon me, for the entertaining of this great person.” Three days after the Jew came to me again, and said; “Ye are happy men; for the Father of Salomon’s House taketh knowledge of your being here, and commanded me to tell you that he will admit all your company to his presence, and have private conference with one of you, that ye shall choose: and for this hath appointed the next day after to-morrow. And because he meaneth to give you his blessing, he hath appointed it in the forenoon.”

We came at our day and hour, and I was chosen by my fellows for the private access. We found him in a fair chamber, richly hanged, and carpeted under foot without any degrees to the state. He was set upon a low Throne richly adorned, and a rich cloth of state over his head, of blue satin embroidered. He was alone, save that he had two pages of honour, on either hand one, finely attired in white. His under garments were the like that we saw him wear in the chariot; but instead of his gown, he had on him a mantle with a cape, of the same fine black, fastened about him. When we came in, as we were taught, we bowed low at our first entrance; and when we were come near his chair, he stood up, holding forth his hand ungloved, and in posture of blessing; and we every one of us stooped down, and kissed the hem of his tippet. That done, the rest departed, and I remained. Then he warned the pages forth of the room, and caused me to sit down beside him, and spake to me thus in the Spanish tongue.

“God bless thee, my son; I will give thee the greatest jewel I have. For I will impart unto thee, for the love of God and men, a relation of the true state of Salomon’s House. Son, to make you know the true state of Salomon’s House, I will keep this order. First, I will set forth unto you the end of our foundation. Secondly, the preparations and instruments we have for our works. Thirdly, the several employments and functions whereto our fellows are assigned. And fourthly, the ordinances and rites which we observe.

“The end of our foundation is the knowledge of causes, and secret motions of things; and the enlarging of the bounds of human empire, to the effecting of all

things possible.

“The Preparations and Instruments are these. We have large and deep caves of several depths: the deepest are sunk six hundred fathom: and some of them are digged and made under great hills and mountains: so that if you reckon together the depth of the hill and the depth of the cave, they are (some of them) above three miles deep. For we find, that the depth of a hill, and the depth of a cave from the flat, is the same thing; both remote alike, from the sun and heaven’s beams, and from the open air. These caves we call the Lower Region; and we use them for all coagulations, indurations, refrigerations, and conservations of bodies. We use them likewise for the imitation of natural mines; and the producing also of new artificial metals, by compositions and materials which we use, and lay there for many years. We use them also sometimes, (which may seem strange,) for curing of some diseases, and for prolongation of life in some hermits that choose to live there, well accommodated of all things necessary, and indeed live very long; by whom also we learn many things.

“We have burials in several earths, where we put diverse cements, as the Chineses do their porcellain. But we have them in greater variety, and some of them more fine. We have also great variety of composts and soils, for the making of the earth fruitful.

“We have high towers; the highest about half a mile in height; and some of them likewise set upon high mountains; so that the vantage of the hill with the tower is in the highest of them three miles at least. And these places we call the Upper Region; accounting the air between the high places and the low, as a Middle Region. We use these towers, according to their several heights, and situations, for insolation, refrigeration, conservation; and for the view of divers meteors; as winds, rain, snow, hail; and some of the fiery meteors also. And upon them, in some places, are dwellings of hermits, whom we visit sometimes, and instruct what to observe.

“We have great lakes, both salt, and fresh; whereof we have use for the fish and fowl. We use them also for burials of some natural bodies: for we find a

difference in things buried in earth or in air below the earth, and things buried in water. We have also pools, of which some do strain fresh water out of salt; and others by art do turn fresh water into salt. We have also some rocks in the midst of the sea, and some bays upon the shore for some works, wherein is required the air and vapor of the sea. We have likewise violent streams and cataracts, which serve us for many motions: and likewise engines for multiplying and enforcing of winds, to set also on going diverse motions.

"We have also a number of artificial wells and fountains, made in imitation of the natural sources and baths; as tincted upon vitriol, sulphur, steel, brass, lead, nitre, and other minerals. And again we have little wells for infusions of many things, where the waters take the virtue quicker and better, than in vessels or basins. And amongst them we have a water which we call Water of Paradise, being, by that we do to it made very sovereign for health, and prolongation of life.

"We have also great and spacious houses where we imitate and demonstrate meteors; as snow, hail, rain, some artificial rains of bodies and not of water, thunders, lightnings; also generations of bodies in air; as frogs, flies, and divers others.

"We have also certain chambers, which we call Chambers of Health, where we qualify the air as we think good and proper for the cure of divers diseases, and preservation of health.

"We have also fair and large baths, of several mixtures, for the cure of diseases, and the restoring of man's body from arefaction: and others for the confirming of it in strength of sinewes, vital parts, and the very juice and substance of the body.

"We have also large and various orchards and gardens; wherein we do not so much respect beauty, as variety of ground and soil, proper for divers trees and herbs: and some very spacious, where trees and berries are set whereof we make divers kinds of drinks, besides the vineyards. In these we practise likewise all conclusions of grafting, and inoculating as well of wild-trees as fruit-trees, which produceth many effects. And we make (by art) in the same orchards and

gardens, trees and flowers to come earlier or later than their seasons; and to come up and bear more speedily than by their natural course they do. We make them also by art greater much than their nature; and their fruit greater and sweeter and of differing taste, smell, colour, and figure, from their nature. And many of them we so order, as they become of medicinal use.

"We have also means to make divers plants rise by mixtures of earths without seeds; and likewise to make divers new plants, differing from the vulgar; and to make one tree or plant turn into another.

"We have also parks and enclosures of all sorts of beasts and birds which we use not only for view or rareness, but likewise for dissections and trials; that thereby we may take light what may be wrought upon the body of man. Wherein we find many strange effects; as continuing life in them, though divers parts, which you account vital, be perished and taken forth; resuscitating of some that seem dead in appearance; and the like. We try also all poisons and other medicines upon them, as well of chirurgery, as physic. By art likewise, we make them greater or taller than their kind is; and contrariwise dwarf them, and stay their growth: we make them more fruitful and bearing than their kind is; and contrariwise barren and not generative. Also we make them differ in colour, shape, activity, many ways. We find means to make commixtures and copulations of different kinds; which have produced many new kinds, and them not barren, as the general opinion is. We make a number of kinds of serpents, worms, flies, fishes, of putrefaction; whereof some are advanced (in effect) to be perfect creatures, like bests or birds; and have sexes, and do propagate. Neither do we this by chance, but we know beforehand, of what matter and commixture what kind of those creatures will arise.

"We have also particular pools, where we make trials upon fishes, as we have said before of beasts and birds.

"We have also places for breed and generation of those kinds of worms and flies which are of special use; such as are with you your silk-worms and bees.

"I will not hold you long with recounting of our brewhouses, bake-houses, and kitchens, where are made divers drinks, breads, and meats, rare and of

special effects. Wines we have of grapes; and drinks of other juice of fruits, of grains, and of roots; and of mixtures with honey, sugar, manna, and fruits dried, and decocted; Also of the tears or woundings of trees; and of the pulp of canes. And these drinks are of several ages, some to the age or last of forty years. We have drinks also brewed with several herbs, and roots, and spices; yea with several fleshes, and white-meats; whereof some of the drinks are such, as they are in effect meat and drink both: so that divers, especially in age, do desire to live with them, with little or no meat or bread. And above all, we strive to have drink of extreme thin parts, to insinuate into the body, and yet without all biting, sharpness, or fretting; insomuch as some of them put upon the back of your hand will, with a little stay, pass through to the palm, and yet taste mild to the mouth. We have also waters which we ripen in that fashion, as they become nourishing; so that they are indeed excellent drink; and many will use no other. Breads we have of several grains, roots, and kernels; yea and some of flesh and fish dried; with divers kinds of leavenings and seasonings: so that some do extremely move appetites; some do nourish so, as divers do live of them, without any other meat; who live very long. So for meats, we have some of them so beaten and made tender and mortified,' yet without all corrupting, as a weak heat of the stomach will turn them into good chylus; as well as a strong heat would meat otherwise prepared. We have some meats also and breads and drinks, which taken by men enable them to fast long after; and some other, that used make the very flesh of men's bodies sensibly' more hard and tough and their strength far greater than otherwise it would be.

"We have dispensatories, or shops of medicines. Wherein you may easily think, if we have such variety of plants and living creatures more than you have in Europe, (for we know what you have,) the simples, drugs, and ingredients of medicines, must likewise be in so much the greater variety. We have them likewise of divers ages, and long fermentations. And for their preparations, we have not only all manner of exquisite distillations and separations, and especially by gentle heats and percolations through divers strainers, yea and substances; but

also exact forms of composition, whereby they incorporate almost, as they were natural simples.

“We have also divers mechanical arts, which you have not; and stuffs made by them; as papers, linen, silks, tissues; dainty works of feathers of wonderful lustre; excellent dies, and, many others; and shops likewise, as well for such as are not brought into vulgar use amongst us as for those that are. For you must know that of the things before recited, many of them are grown into use throughout the kingdom; but yet, if they did flow from our invention, we have of them also for patterns and principals.

“We have also furnaces of great diversities, and that keep great diversity of heats; fierce and quick; strong and constant; soft and mild; blown, quiet; dry, moist; and the like. But above all, we have heats, in imitation of the Sun’s and heavenly bodies’ heats, that pass divers inequalities, and (as it were) orbs, progresses, and returns, whereby we produce admirable effects. Besides, we have heats of dungs; and of bellies and maws of living creatures, and of their bloods and bodies; and of hays and herbs laid up moist; of lime unquenched; and such like. Instruments also which generate heat only by motion. And farther, places for strong insulations; and again, places under the earth, which by nature, or art, yield heat. These divers heats we use, as the nature of the operation, which we intend, requireth.

“We have also perspective-houses, where we make demonstrations of all lights and radiations; and of all colours: and out of things uncoloured and transparent, we can represent unto you all several colours; not in rain-bows, (as it is in gems, and prisms,) but of themselves single. We represent also all multiplications of light, which we carry to great distance, and make so sharp as to discern small points and lines. Also all colourations of light; all delusions and deceits of the sight, in figures, magnitudes, motions, colours all demonstrations of shadows. We find also divers means, yet unknown to you, of producing of light originally from divers bodies. We procure means of seeing objects afar off; as in the heaven and remote places; and represent things near as afar off; and things afar off as near; making feigned distances. We have also helps for the

sight, far above spectacles and glasses in use. We have also glasses and means to see small and minute bodies perfectly and distinctly; as the shapes and colours of small flies and worms, grains and flaws in gems, which cannot otherwise be seen, observations in urine and blood not otherwise to be seen. We make artificial rain-bows, halo's, and circles about light. We represent also all manner of reflexions, refractions, and multiplications of visual beams of objects.

"We have also precious stones of all kinds, many of them of great beauty, and to you unknown; crystals likewise; and glasses of divers kinds; and amongst them some of metals vitrificated, and other materials besides those of which you make glass. Also a number of fossils, and imperfect minerals, which you have not. Likewise loadstones of prodigious virtue; and other rare stones, both natural and artificial.

"We have also sound-houses, where we practise and demonstrate all sounds, and their generation. We have harmonies which you have not, of quarter-sounds, and lesser slides of sounds. Divers instruments of music likewise to you unknown, some sweeter than any you have, together with bells and rings that are dainty and sweet. We represent small sounds as great and deep; likewise great sounds extenuate and sharp; we make divers tremblings and warblings of sounds, which in their original are entire. We represent and imitate all articulate sounds and letters, and the voices and notes of beasts and birds. We have certain helps which set to the ear do further the hearing greatly. We have also divers strange and artificial echoes, reflecting the voice many times, and as it were tossing it: and some that give back the voice louder than it came, some shriller, and some deeper; yea, some rendering the voice differing in the letters or articulate sound from that they receive. We have also means to convey sounds in trunks and pipes, in strange lines and distances.

"We have also perfume-houses; wherewith we join also practices of taste. We multiply smells, which may seem strange. We imitate smells, making all smells to breathe outs of other mixtures than those that give them. We make divers imitations of taste likewise, so that they will deceive any man's taste. And in this house we contain also a confiture-house; where we make all sweet-meats, dry

and moist; and divers pleasant wines, milks, broths, and sallets; in far greater variety than you have.

"We have also engine-houses, where are prepared engines and instruments for all sorts of motions. There we imitate and practise to make swifter motions than any you have, either out of your muskets or any engine that you have: and to make them and multiply them more easily, and with small force, by wheels and other means: and to make them stronger and more violent than yours are; exceeding your greatest cannons and basilisks. We represent also ordnance and instruments of war, and engines of all kinds: and likewise new mixtures and compositions of gunpowder, wild-fires burning in water, and unquenchable. Also fireworks of all variety both for pleasure and use. We imitate also flights of birds; we have some degrees of flying in the air. We have ships and boats for going under water, and brooking of seas; also swimming-girdles and supporters. We have divers curious clocks, and other like motions of return: and some perpetual motions. We imitate also motions of living creatures, by images, of men, beasts, birds, fishes, and serpents. We have also a great number of other various motions, strange for equality, fineness, and subtilty.

"We have also a mathematical house, where are represented all instruments, as well of geometry as astronomy, exquisitely made.

"We have also houses of deceits of the senses; where we represent all manner of feats of juggling, false apparitions, impostures, and illusions; and their fallacies. And surely you will easily believe that we that have so many things truly natural which induce admiration, could in a world of particulars deceive the senses, if we would disguise those things and labour to make them seem more miraculous. But we do hate all impostures, and lies; insomuch as we have severely forbidden it to all our fellows, under pain of ignominy and fines, that they do not show any natural work or thing, adorned or swelling; but only pure as it is, and without all affectation of strangeness.

"These are (my son) the riches of Salomon's House.

"For the several employments and offices of our fellows; we have twelve that sail into foreign countries, under the names of other nations, (for our own we

conceal); who bring us the books, and abstracts, and patterns of experiments of all other parts. These we call Merchants of Light.

“We have three that collect the experiments which are in all books. These we call Depredators.

“We have three that collect the experiments of all mechanical arts; and also of liberal sciences; and also of practices which are not brought into arts. These we call Mystery-men.

“We have three that try new experiments, such as themselves think good. These we call Pioneers or Miners.

“We have three that draw the experiments of the former four into titles and tables, to give the better light for the drawing of observations and axioms out of them. These we call Compilers.

“We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practise for man’s life, and knowledge, as well for works as for plain demonstration of causes, means of natural divinations, and the easy and clear discovery of the virtues and parts of bodies. These we call Dowry-men or Benefactors.

“Then after divers meetings and consults of our whole number, to consider of the former labours and collections, we have three that take care, out of them, to direct new experiments, of a higher light, more penetrating into nature than the former. These we call Lamps.

“We have three others that do execute the experiments so directed, and report them. These we call Inoculators.

“Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms. These we call Interpreters of Nature.

“We have also, as you must think, novices and apprentices, that the succession of the former employed men do not fail; besides, a great number of servants and attendants, men and women. And this we do also: we have consultations, which of the inventions and experiences which we have discovered shall be published, and which not: and take all an oath of secrecy, for

the concealing of those which we think fit to keep secret: though some of those we do reveal sometimes to the state and some not.

"For our ordinances and rites: we have two very long and fair galleries: in one of these we place patterns and samples of all manner of the more rare and excellent inventions in the other we place the statues of all principal inventors. There we have the statue of your Columbus, that discovered the West Indies: also the inventor of ships: your monk that was the inventor of ordnance and of gunpowder: the inventor of music: the inventor of letters: the inventor of printing: the inventor of observations of astronomy: the inventor of works in metal: the inventor of glass: the inventor of silk of the worm: the inventor of wine: the inventor of corn and bread: the inventor of sugars: and all these, by more certain tradition than you have. Then have we divers inventors of our own, of excellent works; which since you have not seen, it were too long to make descriptions of them; and besides, in the right understanding of those descriptions you might easily err. For upon every invention of value, we erect a statue to the inventor, and give him a liberal and honourable reward. These statues are some of brass; some of marble and touch-stone; some of cedar and other special woods gilt and adorned; some of iron; some of silver; some of gold.

"We have certain hymns and services, which we say daily, of Lord and thanks to God for his marvellous works: and forms of prayers, imploring his aid and blessing for the illumination of our labours, and the turning of them into good and holy uses.

"Lastly, we have circuits or visits of divers principal cities of the kingdom; where, as it cometh to pass, we do publish such new profitable inventions as we think good. And we do also declare natural divinations of diseases, plagues, swarms-of hurtful creatures, scarcity, tempests, earthquakes, great inundations, comets, temperature of the year, and divers other things; and we give counsel thereupon, what the people shall do for the prevention and remedy of them."

And when he had said this, he stood up; and I, as I had been taught, kneeled down, and he laid his right hand upon my head, and said; "God bless thee, my son; and God bless this relation, which I have made. I give thee leave to publish

it for the good of other nations; for we here are in God's bosom, a land unknown." And so he left me; having assigned a value of about two thousand ducats, for a bounty to me and my fellows. For they give great largesses where they come upon all occasions.

[The rest was not perfected.]

Sylva Sylvarvm

OR A NATURALL HISTORY

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Et vidit Deus lucem quod esset bona.

Mundus Intellectualis

SYLVA SYLVARVM or A NATVRALL HISTORY In ten Centuries.
Written by the right Hon^{ble} Francis Lo: Verulam Viscount S^{ct} Alban.
Published after Y^{e} Autho^{rs} Death by W. RAWLEY D^{r} of Diuinity
LONDON Printed for W. Lee and are to be sould at the Great Turks head next to the Mytre Taurne in Fleetstreet
Anno ——

TO THE MOST HIGH AND MIGHTY PRINCE CHARLES, BY THE GRACE OF GOD, King of Great Britaine, France, and Ireland, Defender of the Faith, &c.

May it please your most Excellent Maiestie; THe whole Body of the Naturall Historie, either designed, or written, by the late Lo. Viscount S. Alban, was dedicated to your Maiestie, in his Booke De Ventis, about foure yeeres past, when your Maiestie was Prince: So as there needed no new Dedication of this Worke, but only, in all humblenesse, to let your Maiestie know, it is yours. It is true, if that Lo. had liued; your Maiestie, ere long, had beene inuoked, to the Protection of another Historie; Whereof, not Natures Kingdome, as in this, but these of your Maiesties, (during the Time and Raigne of King Henry the Eighth) had beene the Subiect: Which since it died vnder the Designation meerely, there is nothing left, but your Maiesties Princely Goodnesse, graciously to accept of the Vndertakers Heart, and Intentions; who was willing to haue parted, for a while, with his Darling Philosophie, that hee might haue attended your Royall Commandement, in that other Worke. Thus much I haue beene bold, in all lowlinesse, to represent vnto your Maiestie, as one that was trusted with his Lordships Writings, euen to the last. And as this Worke affecteth the Stampe of your Maiesties Royall Protection, to make it more currant to the World; So vnder the Protection of this Worke, I presume in all humblenesse to approach your Maiesties presence; And to offer it vp into your Sacred Hands.

Your MAIESTIES most Loyall and Deuoted Subiect, W. RAWLEY.

SYLVA SYLVARVM: OR A Naturall Historie. IN TEN CENTURIES.

WRITTEN BY THE RIGHT Honourable FRANCIS Lo. Verulam Viscount S^{t}. ALBAN.

Published after the Authors death, By WILLIAM RAWLEY Doctor of Diuinitie, late his Lordships Chaplaine.

LONDON, ¶Printed by I. H. for William Lee at the Turks Head in Fleet-street, next to the Miter. 1626.

To the Reader.

HAuing had the Honour to be continually with my Lord, in compiling of this Worke; And to be employed therein; I haue thought it not amisse, (with his Lordships good leaue and liking,) for the better satisfaction of those that shall reade it, to make knowne somewhat of his Lordships Intentions, touching the Ordering, and Publishing of the same. I haue heard his Lordship often say; that if hee should haue serued the glory of his owne Name, he had been better not to haue published this Naturall History: For it may seeme an Indigested Heap of Particulars; And cannot haue that Lustre, which Bookes cast into Methods haue: But that he resolued to preferre the good of Men, and that which might best secure it, before any thing that might haue Relation to Himselfe. And hee knew well, that ther was no other way open, to vnloose Mens mindes, being bound; and (as it were) Maleficiate, by the Charmes of deceiuing Notions, and Theories; and therby made Impotent for Generation of VVorkes; But onely no wher to depart from the Sense, and cleare experience; But to keepe close to it, especially in the beginning: Besides, this Naturall History was a Debt of his, being Designed and set downe for a third part of the Instauration. I haue also heard his Lordship discourse, that Men (no doubt) will thinke many of the Experiments conteined in this Collection, to bee Vulgar and Triuiall; Meane and Sordid; Curious and Fruitlesse: And therfore he wisheth, that they would haue perpetually before their Eyes, what is now in doing; And the Difference betweene this Naturall History, and others. For those Naturall Histories, which are Extant, being gathered for Delight and Vse, are full of pleasant Descriptions and Pictures; and affect and seeke after Admiration, Rarities, and Secrets. But contrariwise, the Scope which his Lordship intendeth, is to write such a Naturall History, as may be Fundamentall to the Erecting and Building of a true Philosophy: For the Illumination of the Vnderstanding; the Extracting of Axiomes; and the producing of many Noble Works, and Effects. For he hopeth, by this meanes, to acquit Himselfe of that, for which hee taketh Himselfe in a sort bound; And that is, the Aduancement of all Learning and Sciences. For

hauing in this present VVorke Collected the Materialls for the Building; And in his Novum Organum (of which his Lordship is yet to publish a Second Part,) set downe the Instruments and Directions for the Worke; Men shall now bee wanting to themselues, if they raise not Knowledge to that perfection, whereof the Nature of Mortall men is capable. And in this behalfe, I haue heard his Lordship speake complainingly; That his Lordship (who thinketh hee deserueth to be an Architect in this building,) should be forced to be a VVork-man and a Labourer; And to digge the Clay, and burne the Brick; And more then that, (according to the hard Condition of the Israelites at the latter end) to gather the Strawe and Stubble, ouer all the Fields, to burn the Bricks withall. For he knoweth, that except hee doe it, nothing will be done: Men are so sett to despise the Meanes of their owne good. And as for the Basenes of many of the Experiments; As long as they be Gods VVorks, they are Honourable enough. And for the Vulgarnes of them; true Axiomes must be drawne from plaine Experience, and not from doubtfull; And his Lordships course is, to make VVonders Plaine, and not Plaine things VVonders; And that Experience likewise must be broken and grinded, and not whole, or as it groweth. And for Vse; his Lordship hath often in his Mouth, the two kindes of Experiments; Experimenta Fructifera, and Experimenta Lucifera: Experiments of Vse, and Experiments of Light; And he reporteth himself, whether he were not a strange Man, that should thinke that Light hath no Vse, because it hath no Matter. Further, his Lordship thought good also, to add vnto many of the Experiments themselues, some Glosse of the Causes; that in the succeeding work of Interpreting Nature, and Framing Axiomes, all things may be in more Readines. And for the Causes herein by Him assigned; his Lordship perswadeth Himselfe, they are farr more certaine, then those that are rendred by Others; Not for any Excellency of his owne Witt, (as his Lordship is wont to say) but in respect of his continuall Conuersation with Nature, and Experience. He did consider likewise, that by this Addition of Causes, Mens mindes (which make so much hast to find out the Causes of things;) would not think themselues vtterly lost, in a Vast VVood of Experience, but stay vpon these Causes, (such as they are) a little, till true

Axiomes may be more fully discouered. I haue heard his Lordship say also, that one great Reason, why he would not put these Particulars into any exact Method, (though he that looketh attentiuely into them, shall finde that they haue a secret Order) was, because hee conceiued that other men would now thinke, that they could doe the like; And so goe on with a further Collection: which if the Method had been Exact, many would haue despaired to attaine by Imitation. As for his Lordships loue of Order, I can referr any Man to his Lordships Latine Booke, De Augmentis Scientiarum; which (if my Iudgment be any thing) is written in the Exactest Order, that I know any Writing to bee. I will conclude with an vsuall Speech of his Lordships. That this Worke of his Naturall History, is the World, as GOD made it, and not as Men haue made it; For that it hath nothing of Imagination.

W: Rawley.

I. Century.

DIGG a Pitt vpon the Sea shore, somewhat aboue the High-water Marke, and sincke it as deepe as the Low-Water marke; And as the Tide commeth in, it will fill with Water, Fresh and Potable. This is commonly practized vpon the Coast of Barbary, where other fresh Water is wanting. And CAESAR knew this well, when he was besieged in Alexandria: For by Digging of Pitts in the Sea shoare, hee did frustrate the Laborious Workes of the Enemies, which had turned the Sea-Water vpon the Wells of Alexandria; And so saued his Army, being then in Desperation. But Caesar mistooke the Cause, For he thought that all Sea-Sandes had Naturall Springs of Fresh Water. But it is plaine, that it is the Sea-Water; because the Pitt filleth according to the Measure of the Tide: And the Sea-water passing or Strayning through the Sandes, leaueth the Saltnesse.

I remember to haue Read, that Triall hath beene made of Salt Water passed through Earth; through Tenn Vessells, one within an other, and yet it hath not lost his Saltnesse, as to become potable: But the same Man saith, that (by the Relation of Another,) Salt Water drained through twenty Vessells, hath become Fresh. This Experiment seemeth to crosse that other of Pitts, made by the Sea side; And yet but in part, if it be true, that twentie Repetitions doe the Effect. But it is worth the Note, how poore the Imitations of Nature are, in Common course of Experiments, except they be led by great Iudgement, and some good Light of Axiomes. For first, ther is no small difference betweene a Passage of Water through twenty small Vessells; And through such a distance, as betweene the Low water, and High water Marke. Secondly, there is a great difference betweene Earth and Sand. For all Earth hath in it a kinde of Nitrous Salt, from which Sand is more free: And besides Earth doth not straine the Water so finely, as Sand doth. But ther is a Third Point, that I suspect as much, or more, then the other Two: And that is, that in the Experiment of Transmission of the Sea-water into the Pitts, the Water riseth; But in the Experiment of Transmission of the Water through the Vessells, it falleth: Now certaine it is, that the Salter Part of

Water, (once Salted throughout) goeth to the Bottome. And therfore no meruaile, if the Draining of Water by descent, doth not make it fresh: Besides, I doe somewhat doubt, that the very Dashing of the Water, that commeth from the Sea, is more proper to strike of the Salt part, then wher the Water slideth of her owne Motion.

It seemeth Percolation or Transmission, (which is commonly called Straining,) is a good kinde of Separation; Not onely of Thicke from Thin, and Grosse from Fine,; But of more subtile Natures; And varieth according to the Bodie through which the Transmission is made. As if through a wollen Bagg, the Liquour leaueth the Fatnesse; If through Sand, the Saltnesse; &c. They speake of Seuering Wine from Water, passing it through Iuy wood, or through other the like porous Body; But Non Constat.

The Gumm of Trees (which wee see to be commonly shining and cleare) is but a fine Passage or Straining of the Iuice of the Tree, through the Wood and Bark. And in like manner, Cornish Diamonds, and Rock Rubies, (which are yet more resplendent then Gumms) are the fine Exudations of Stone.

Aristotle giueth the Cause, vainely, why the Feathers of Birdes are of more liuely Colours, then the Haires of Beastes; for no Beast hath any fine Azure, or Carnation, or Greene Haire. He saith, It is, because Birds are more in the Beames of the Sunn, then Beasts; But that is manifestly vntrue; For Cattle are more in the Sun then Birds, that liue commonly in the Woods, or in some Couert. The true Cause is, that the Excrementious Moisture of liuing Creatures, which maketh as well the Feathers in Birds, as the Haire in Beasts, passeth in Birds through a finer and more delicate Strainer, then it doth in Beastes: For Feathers passe through Quills; And Haire through Skin.

The Clarifying of Liquors by Adhesion is an Inward Percolation; And is effected, when some Cleauing Body is Mixed and Agitated with the Liquours; wherby the grosser Part of the Liquor sticks to that Cleauing Body; And so the finer Parts are freed from the Grosser. So the Apothecaries clarify their Sirrupes by whites of Eggs, beaten with the Iuices which they would clarify; which Whites of Eggs, gather all the Dreggs and grosser Parts of the Iuyce to them;

And after the Sirrupe being sett on the Fire, the whites of Egges themselues harden, and are taken forth. So Ippocrasse is clarified by mixing with Milke; And stirring it about; And then passing it through a Wollen Bagge, which they call Hippocrates Sleeue: And the Cleauing Nature of the Milke draweth the Powder of the Spices, and Grosser parts of the Liquour to it; And in the passage they stick vpon the Woollen Bagge.

The Clarifying of Water, is an Experiment tending to Health; besides the pleasure of the Eye, when Water is Crystaline. It is effected by casting in and placing Pebbles, at the Head of a Current; that the Water may straine through them.

It may be, Percolation doth not onely cause Clearenesse and Splendour, but Sweetnes of Sauour; For that also followeth, as well as Clearenes, when the Finer Parts are seuered from the Grosser. So it is found, that the Sweates of Men that haue much Heat, and exercise much, and haue cleane Bodies, and fine Skins, doe smell sweet; As was said of Alexander; And we see, commonly, that Gumms haue sweet Odours.

TAke a Glasse, and put Water into it, and wett your Finger, and draw it round about the Lipp of the Glasse, pressing it somewhat hard; And after you haue drawne it some few times about; it will make the Water friske and sprinckle vp, in a fine Dew. This Instance doth excellently Demonstrate the Force of Compression in a Solid Body. For whensoeuer a Solid Body (as Wood, Stone, Mettall, &c.) is pressed, ther is an inward Tumult in the parts therof; seeking to deliuer themselues from the Compression: And this is the Cause of all Violent Motion. Wherin it is strange in the highest Degree, that this Motion hath neuer been obserued, nor inquired; It being of all Motions, the most Common, and the Chiefe Roote of all Mechanicall Operations. This Motion worketh in round at first, by way of Proofe, and Search, which way to deliuer it selfe; And then worketh in Progresse, wher it findeth the Deliuerance easiest. In Liquours this Motion is visible: For all Liquours strucken make round Circles, and withall Dash; but in Solids, (which breake not,) it is so subtile, as it is inuisible; But neuertheless bewrayeth it selfe by many Effects; As in this Instance wherof we

speake. For the Pressure of the Finger furthered by the wetting (because it sticketh so much the better vnto the Lipp of the Glasse,) after some continuance, putteth all the small Parts of the Glasse, into worke; that they strike the Water sharpely; from which Percussion that Sprinkling commeth.

If you strike or pierce a Solid Body, that is brittle, as Glasse, or Sugar, it breaketh not onely, wher the immediate force is; but breaketh all about into shiuers and fitters; The Motion, vpon the Pressure, searching all wayes; and breaking where it findeth the Body weakest.

The Powder in Shot, being Dilated into such a Flame, as endureth not Compression; Moueth likewise in round, (The Flame being in the Nature of a liquid Body:) Sometimes recoyling; Sometimes breaking the Piece; But generally discharging the Bullett, because ther it findeth easiest Deliuerance.

This Motion vpon Pressure, and the Reciprocall therof, which is Motion vpon Tensure; we vse to call (by one common Name) Motion of Libertie; which is, when any Body, being forced to a PreterNaturall Extent, or Dimension, deliuereth and restoreth it selfe to the Naturall: As when a Blowne Bladder (Pressed) riseth againe; or when Leather or Cloath tentured spring backe. These two Motions (of which ther be infinite Instances,) we shall handle in due place.

This Motion vpon Pressure is excellently also demonstrated in Sounds; As when one Chimeth vpon a Bell, it soundeth; But as soon as he layeth his hand vpon it, the Sound ceaseth: And so, the Sound of a Virginall String, as soone as the Quill of the Iack falleth vpon it, stoppeth. For these Sounds are produced, by the subtile Percussion of the Minute parts, of the Bell, or String, vpon the Aire; All one, as the Water is caused to leape by the subtile Percussion of the Minute parts of the Glasse, vpon the Water, wherof we spake a little before in the 9th. Experiment. For you must not take it to be, the locall Shaking of the Bell, or String, that doth it. As we shall fully declare, when we come hereafter to handle Sounds.

TAke a Glasse with a Belly and a long Nebb; fill the Belly (in part) with Water: Take also another Glasse, whereinto put Claret Wine and Water mingled; Reverse the first Glasse, with the Belly vpwards, Stopping the Nebb with your

fingar; Then dipp the Mouth of it within the Second Glasse, and remoue your Fingar: Continue it in that posture for a time; And it will vnmingle the VVine from the Water: The VVine ascending and setling in the topp of the vpper Glasse; And the VVater descending and setling in the bottome of the lower Glasse. The passage is apparent to the Eye; For you shall see the VVine, as it were, in a small veine, rising through the VVater. For handsomnesse sake (because the Working requireth some small time) it were good you hang the vpper Glasse vpon a Naile. But as soone as ther is gathered so much pure and vnmixed water in the Bottome of the Lower Glasse, as that the Mouth of the vpper Glasse dippeth into it, the Motion ceaseth

Let the Vpper Glasse be VVine, and the Lower VVater; ther followeth no Motion at all. Lett the Vpper Glasse be VVater pure, the Lowwer VVater coloured; or contrariwise; ther followeth no Motion at all. But it hath been tried, that though the Mixture of VVine and VVater, in the Lower Glasse, be three parts VVater, and but one VVine; yet it doth not dead the Motion. This Separation of VVater and VVine appeareth to be made by Weight; for it must be of Bodies of vnequall Weight, or ells it worketh not; And the Heauier Body must euer be in the vpper Glasse. But then note withall, that the VVater being made pensile, and ther being a great VVeight of VVater in the Belly of the Glasse, sustained by a small Pillar of VVater in the Neck of the Glasse; It is that, which sesteth the Motion on worke: For VVater and VVine in one Glasse, with long standing, will hardly seuer.

This Experiment would be Extended from Mixtures of seuerall Liquors, to Simple Bodies, which Consist of seuerall Similare Parts: Try it therfore with Broyne or Salt water, and Fresh water; Placing the Salt water (which is the heauier) in the vpper Glasse; And see whether the Fresh will come aboue. Try it also with VVater thick Sugred, and Pure water; and see whether the water which commeth aboue, will loose his Sweetnes: For which purpose it were good ther were a little Cock made in the Belly of the vpper Glasse.

IN Bodies containing Fine Spirits, which doe easely dissipate, when you make Infusions, the Rule is; A short Stay of the Body in the Liquour receyueth

the Spiritt; And a longer Stay confoundeth it; because it draweth forth the Earthy Part withall; which embaseth the finer. And therfore it is an Errour in Phisicians, to rest simply vpon the Length of stay, for encreasing the vertue. But if you will haue the Infusion strong, in those kinde of Bodies, which haue fine Spiritts, your way is, not to giue Longer time, but to repeat the Infusion of the Body oftner. Take Violetts, and infuse a good Pugill of them in a Quart of Vineger; Lett them stay three quarters of an houre, and take them forth; And refresh the Infusion with like quantity of new Violetts, seuen times; And it will make a Vineger so fresh of the Flower, as if a Twelue-moneth after, it be brought you in a Saucer, you shall smell it before it come at you. Note, that it smelleth more perfectly of the Flower, a good while after, then at first.

This Rule, which wee haue giuen, is of singular vse, for the Preparations of Medecines, and other Infusions. As for Example; the Leafe of Burrage hath an Excellent Spiritt, to represse the fuliginous Vapour of Dusky Melancholy, and so to cure Madnes: But neuerthelesse, if the Leafe be infused long, it yieldeth forth but a raw substance, of no Vertue; Therfore I suppose, that if in the Must of Wine, or Wort of Beere, while it worketh, before it be Tunned, the Burrage stay a small time, and be often changed with fresh; It will make a Soueraigne Drink for Melancholy Passions. And the like I conceyue of Orenge Flowers.

Rubarb hath manifestly in it Parts of contrary Operations: Parts that purge; And parts that binde the body: And the first lay looser, and the latter lay deeper: So that if you infuse Rubarb for an houre, and crush it well, it will purge better, and binde the Body lesse after the purging, then if it stood twenty foure houres; This is tried: But I conceiue likewise, that by Repeating the Infusion of Rubarb, seuerall times, (as was said of Violetts,) letting each stay in but a small time; you may make it as strong a Purging Medecine, as Scammony. And it is not a small thing wonn in Phisick, if you can make Rubarb, and other Medecines that are Benedict, as strong Purgers, as those that are not without some Malignity.

Purging Medecines, for the most part, haue their Purgatine Vertue, in a fine Spirit; As appeareth by that they indure not boiling, without much losse of vertue. And therfore it is of good vse in Phisick, if you can retaine the Purging

Vertue, and take away the Vnpleasant tast of the Purger; which it is like you may doe, by this Course of Infusing oft, with little stay. For it is probable, that the Horrible and Odious Tast, is in the Grosser part.

Generally, the working by Infusions, is grosse and blinde, except you first try the Issuing of the seuerall Parts of the Body, which of them Issue more speedily, and which more slowly; And so by apportioning the time, can take and leaue that Quality, which you desire. This to know, ther be two waies; The one to try what long stay, and what short stay worketh, as hath been said: The other to try in Order, the succeding Infusions, of one and the same Body, successiuely, in seuerall Liquors. As for example; Take Orenge-Pills, or Rose-Mary, or Cinnamon, or what you will; And let them Infuse halfe an houre in VVater: Then take them out, and Infuse them againe in other VVater; And so the third time: And then tast and consider the First water, the Second, and the Third: And you will find them differing, not only in Strength and Weaknes, but otherwise in Tast, or Odour; For it may bee the First water will haue more of the Sent, as more Fragrant; And the Second more of the Tast, as more bitter or Biting, &c.

Infusions in Aire, (for so we may well call Odours) haue the same diuersities with Infusions in VVater; In that the seuerall Odours (which are in one Flower, or other Body) issue at seuerall times; Some earlier, some later: So we finde that Violetts, Woodbines, Strawberries, yield a pleasing Sent, that commeth forth first; But soone after an ill Sent, quite differing from the Former; Which is caused, not so much by Mellowing, as by the late Issuing of the Grosser Spirit.

As we may desire to extract the finest Spirits in some Cases; So we may desire also to discharge them (as hurtfull) in some other. So VVine burnt, by reason of the Evaporating of the finer Spirit, enslameth lesse, and is best in Agues: Opium leeseth some of his poisonous Quallity, if it be vapoured out, mingled with Spirit of Wine, or the like: Sean leeseth somewhat of his windines by Decocting; And (generally) subtile or windy Spirits are taken off by Incension, or Evaporation. And euen in Infusions in things that are of too high a Spirit, you were better poure off the first Infusion, after a small time, and vse the latter.

BVbbles are in the forme of a Hemisphere; Aire within, and a little Skin of VVater without: And it seemeth somewhat strange, that the Aire should rise so swiftly, while it is in the VVater; And when it commeth to the topp, should be staid by so weake a Couer as that of the Bubble is. But as for the swift Ascent of the Aire, while is vnder the VVater, that is a Motion of Percussion from the VVater; which it selfe descending, driueth vpp the Aire; and no Motion of Leuity in the Aire. And this Democritus called Motus Plaga. In this Common Experiment, the Cause of the Enclosure of the Bubble is, for that the Appetite to resist Separation, or Discontinuance, (which in solide Bodies is strong) is also in Liquours, though fainter and weaker; As wee see in this of the Bubble: we see it also in little Glasses of Spittle that children make of Rushes; And in Castles of Bubbles, which they make by blowing into water, hauing obtained a little Degree of Tenacity by Mixture of Soape: Wee see it also in the Stillicides of water, which if ther be water enough to follow, will Drawe themselues into a small thredd, because they will not discontinue; But if ther be no Remedy, then they cast themselues into round Dropps; which is the Figure, that saueth the Body most from Discontinuance: The same Reason is of the Roundnes of the Bubble, as well for the Skin of water, as for the Aire within: For the Aire likewise auoideth Discontinuance; And therfore casteth it self into a Round Figure. And for the stopp and Arrest of the Aire a little while, it sheweth that the Aire of it selfe hath little, or no Appetite, of Ascending.

THE Reiection, which I continually vse, of Experiments, (though it appeareth not) is infinit; But yet if an Experiment be probable in the Worke, and of great Vse, I receyue it, but deliuer it as doubtfull. It was reported by a Sober Man, that an Artificiall Spring may be made thus: Finde out a hanging Ground, wher ther is a good quick Fall of Raine-water. Lay a Half-Trough of Stone, of a good length, 3. or 4. foote deep within the same Ground; with one end vpon the high Ground, the other vpon the lowe. Couer the Trough with Brakes a good thicknes, and cast Sand vpon the Topp of the Brakes: You shall see, (saith he) that after some showers are past, the lower End of the Trough will runn like a Spring of water: which is no maruaile, if it hold, while the Raine-water lasteth; But he said

it would continue long time after the Raine is past: As if the water did multiply it self vpon the Aire, by the helpe of the Coldnesse and Condensation of the Earth, and the Consort of the first Water.

THE French, (which put off the Name of the French Disease; vnto the Name of the Disease of Naples,) doe report, that at the Siege of Naples, ther were certaine wicked Merchants, that Barrelled vpp Mans flesh, (of some that had been, lately slaine in Barbary) and sold it for Tunny; And that vpon that foule and high Nourishment, was the Originall of that Disease. Which may well be; For that it is certaine, that the Caniballs in the West Indies, eate Mans flesh; And the West Indies were full of the Pockes when they were first discouered: And at this day the Mortallest poisons, practised by the West Indians, haue some Mixture of the Bloud, or Fatt, or Flesh of Man: And diuers Witches, and Sorceresles, aswell amongst the Heathen, as amongst the Christians, haue fedd vpon Mans flesh, to aid (as it seemeth) their Imagination, with High and foule Vapours.

IT seemeth that ther be these waies (in likelihood) of Version of Vapours, or Aire, into Water and Moisture. The first is Cold; which doth manifestly Condense; As wee see in the Contracting of the Aire in the Weather-Glasse; whereby it is a Degree nearer to water. Wee see it also in the Generation of Springs, which the Ancients thought (very probably) to be made by the Version of Aire into water, holpen by the Rest, which the Aire hath in those Parts; wherby it cannot dissipate. And by the Coldnes of Rockes; for ther Springs are chiefly generated. Wee see it also in the Effects of the Cold of the Middle Region (as they call it) of the Aire; which produceth Dews, and Raines. And the Experiment of Turning water into Ice, by Snow, Nitre, and Salt, (wherof wee shall speake hereafter,) would be transferred to the Turning of Aire into Water. The Second way is by Compression; As in Stillatories, wher the Vapour is turned back, vpon it self, by the Encounter of the Sides of the Stillatory; And in the Dew vpon the Couers of Boyling Potts; And in the Dew towards Raine, vpon Marble, and Wainscott. But this is like to doe no great effect; Except it be vpon Vapours, and grosse Aire, that are allready very neare in Degree to Water. The

Third is that, which may be searched into, but doth not yet appeare; which is, by Mingling of moist Vapours with Aire; And trying if they will not bring a Returne of more Water, then the water was at first: For if so; That Increase is a version of the Aire: Therfore putt water into the Bottome of a Stillatory, with the Nebb stopped; Weigh the Water first; Hang in the Middle of the Stillatory a large Spunge; And see what Quantitie of Water you can crush out of it; And what it is more, or lesse, compared with the water spent; For you must vnderstand, that if any Version can be wrought, it will be easeliest done in small Pores: And that is the Reason why wee prescribe a Spunge. The Fourth way is Probable also, though not Appearing; Which is, by Receiuing the Aire into the small Pores of Bodies; For (as hath been said) euery thing in small Quantity is more easy for version; And Tangible Bodies haue no pleasure in the Consort of Aire, but endeauour to subact it into a more Dense Body: But in Entire Bodies it is checked; because if the Aire should Condense, ther is nothing to succeed: Therfore it must be in loose Bodies, as Sand, and Powder; which wee see, if they lye close, of themselues gather Moisture.

IT is reported by some of the Ancients; That Whelps, or other Creatures, if they be put Young, into such a Cage, or Boxe, as they cannot rise to their Stature, but may encrease in Breadth, or length; will growe accordingly, as they can gett Roome: which if it be true, and faisible, and that the young Creature so pressed, and straightened, doth not therupon die; It is a Meanes to produce Dwarfe Creatures, and in a very Strange Figure. This is certaine, and noted long since; That the Pressure or Forming of Parts of Creatures, when they are very young, doth alter the Shape not a little; As the Stroaking of the Heads of Infants, between the Hands, was noted of Old, to make Macrocephali; which shape of the Head, at that time, was esteemed. And the Raising gently of the Bridge of the Nose, doth preuent the Deformity of a Saddle Nose. Which obseruation well weighed, may teach a Meanes, to make the Persons of Men, and Women, in many kindes, more comely, and better featured, then otherwise they would be; By the Forming and Shaping of them in their Infancy: As by Stroaking vp the Calues of the Leggs, to keepe them from falling downe too lowe; And by

Stroaking vp the Forehead to keepe them from being lowforeheaded. And it is a common Practise to swath Infants, that they may growe more straight, and better shaped: And wee see Young Women, by wearing straight Bodies, keepe themselues from being Grosse, and Corpulent.

ONions, as they hang, will many of them shoot forth; And so will Penniroiall; And so will an Herb called Orpin; with which they vse, in the Country, to trimme their Houses, binding it to a Lath, or Stick, and setting it against a wall. We see it like wise, more especially, in the greater Semper-vine, which will put out Branches, two or three yeares: But it is true, that commonly they wrapp the Root in a Cloth besmeared with Oyle, and renue it once in halfe a Yeare. The like is reported by some of the Ancients, of the Stalks of Lillies. The Cause is; For that these Plants haue a Strong, Dense, and Succulent Moisture, which is not apt to exhale; And so is able, from the old store, without drawing helpe from the Earth, to suffice the sprouting of the Plant: And this Sprouting is chiefly in the late Spring, or early Sommer; which are the Times of Putting forth. We see also, that Stumps of Trtes, lying out of the ground, will put forth Sprouts for a Time. But it is a Noble Triall, and of very great Consequence, to try whether these things, in the Sprouting, doe increase Weight; which must be tried, by weighing them before they be hangd vp; And afterwards againe, when they are sprouted. For if they encrease not in Weight; Then it is no more but this; That what they send forth in the Sprout, they leese in some other Part: But if they gather Weight, then it is Magnale Naturae; For it sheweth that Aire may be made so to be Condensed, as to be conuerted into a Dense Body; wheras the Race and Period of all things, here aboue the Earth, is to extenuate and turne things to be more Penumaticall, and Rare; And not to be Retrograde, from Pneumaticall to that which is Dense. It sheweth also, that Aire can Nourish; which is another great Matter of Consequence. Note, that to try this, the Experiment of the Semper-viue must be made without Oiling the Cloth; For els, it may be, the Plant receiueth Nourishment from the Oile.

FLame and Aire doe not Mingle, except it be in an Instant; Or in the vitall Spiritts of vegetables, and liuing Creatures. In Gunpowder, the Force of it hath

been ascribed, to Rarefaction of the Earthy Substance into Flame; And thus farr it is true: And then (forfooth) it is become another Element; the Forme wherof occupieth more place; And so, of Necessity, followeth a Dilatation: And therfore, lest two Bodies should be in one place, ther must needes also follow an Expulsion of the pellet; Or Blowing vp of the Mine. But these are Crude and Ignorant Speculations. For Flame, if ther were nothing els, except it were in very great quantity, will be suffocate with any hard Body, such as a Pellet is, Or the Barrell of a Gunn; So as the Flame would not expell the hard Body; But the hard Body would kill the Flame, and not suffer it to kindle, or spread. But the Cause of this so potent a Motion, is the Nitre, (which wee call otherwise Salt-Petre;) which hauing in it anotable Crude and windy Spirit, first by the Heate of the Fire suddainly dilateth it self; (And wee knowe that simple Aire, being preternaturally attenuated by Heate, will make it self Roome, and breake and blowe vp that which resisteth it;) And Secondly, when the Nitre hath Dilated it self, it bloweth abroad the Flame, as an Inward Bellowes. And therfore wee see that Brimstone, Pitch, Camphire, Wilde-Fire, and diuers other Inflammable Matters, though they burne cruelly, and are hard to quench; Yet they make no such fiery winde, as Gunpowder doth: And on the other side, wee see that Quick Siluer, (which is a most Crude and Watry Body) heated, and pent in, hath the like force with Gunpowder. As for liuing Creatures, it is certaine, their Vitall Spiritts are a Substance Compounded of an Airy and Flamy Matter; And though Aire and Flame being free, will not well mingle; yet bound in by a Body that hath some fixing, they will. For that you may best see in those two Bodies, (which are their Aliments,) water, and Oyle; For they likewise will not well mingle of themselues, but in the Bodies of Plants, and liuing Creatures, they will. It is no maruaile therfore, that a small Quantity of Spiritts, in the Cells of the Braine, and Canales of the Sinewes, are able to moue the whole Body, (which is of so great Masse,) both with so great Force, as in Wrestling, Leaping; And with so great Swiftnes, As in playing Diuision vpon the Lute. Such is the force of these two Natures, Aire and Flame, when they incorporate.

TAke a small waxe Candle, and putt it in a Socket, of Brasse, or Iron; Then sett it vpright in a Porringer full of Spirits of Wine, heated: Then sett both the Candle, and Spiritt of Wine, on fire, and you shall see the Flame of the Candle, open it self, and become 4. or 5. times bigger then otherwise it would haue been; and appeare in Figure Globular and not in Piramis. You shall see also, that the Inward Flame of the Candle keepeth Colour, and doth not waxe any whitt blewe towardes the Colour of the Outward flame of the Spiritt of Wine. This is a Noble Instance; where in two things are most remarkable; The one; that one Flame within another quencheth not; but is a fixed Body, and continueth as Aire, or Water doe. And therefore Flame would still ascend vpwards in one greatnesse, if it were not quenched on the Sides: And the greater the Flame is at the Bottome, the higher is the Rise. The other, that Flame doth not mingle with Flame, as Aire doth with Aire, or Water with Water, but only remaineth contiguous; As it commeth to passe betwixt Consisting Bodies. It appeareth also, that the forme of a Piramis in Flame, which we vsually see, is meerely by Accident, and that the Aire about, by quenching the Sides of the Flame, crusheth it, and extenuateth it into that Forme; For of it selfe it would be Round: And therefore Smoake is in the Figure of a Piramis Reuersed; For the Aire quencheth the Flame, and receiueth the Smoake. Note also, that the Flame of the Condle, within the Flame of the Spirit of Wine, is troubled; And doth not onely open and moue vpwards, but moueth wauing, and to and fro: As if Flame of his owne Nature (if it were not quenched,) would rowle and turne, as well as moue vpwards. By all which, it should seeme, that the Caelestiall Bodies, (most of them,) are true Fires or Flames, as the Stoicks held; More fine (perhaps) and Rarified, than our Flame is. For they are all Globular, and Determinate,; They haue Rotation; And they haue the Colour and Splendour of Flame: So that Flame aboue is Durable, and Consistent, and in his Naturall place; But with vs, it is a Stranger, and Momentany, and Impure; Like Vulcan that haked with his Fall.

Take an Arrow, and hold it in Flame, for the space of ten pulses; And when it commeth forth, you shall finde those Parts of the Arrow, which were on the Outsides of the Flame, more burned, blacked, and turned almost into a Coale;

whereas that in the Middest of the Flame, will be, as if the Fire had scarce touched it. This is an Instance of great consequence for the discouery of the Nature of Flame; And sheweth manifestly, that Flame burneth more violently towards the Sides, than in the Middest: And, which is more, that Heat or Fire is not violent or furious, but where it is checked, and pont. And therfore the Peripatetickes (howsoeuer their opinion of an Element of Fire aboue the Aire is iustly exploded;) in that Point they acquit themselues well: For being opposed, that if there were a Spbeare of Fire, that incompassed the Earth so neare hand, it were impossible but all things should be burnt vp; They answer, that the pure Elementall Fire, in his owne place, and not irritate, is but of a Moderate Heat.

It is affirmed constantly by many, as an vsuall Experiment; That a Lampe of Vre, in the Bottome of a Mine, will be tumbled, and stirred, by two Mens strength; which if you bring it to the Topp of the Earth, will aske Six Mens strength at the least to stirre it. It is a Noble Instance, and is fit to be tried to the full: For it is very probable, that the Motion of Grauitie worketh weakly, both farre from the Earth, and also within the Earth: The former, because the Appetite of Vnion of Dense Bodies with the Earth, in respect of the distance, is more dull; The latter, because the Body hath in part attained his Nature, when it is some Depth in the Earth. For as for the Mouing to a Point or Place (which was the Opinion of the Ancients) it is a meere Vanity.

It is strange, how the Ancients tooke vp Experiments vpon credit, and yet did build great Matters vpon them. The Obseruation of some of the best of them, deliuered confidently, is That a Vessell filled with Ashes, will receiue the like quantity of Water, that it would haue done, if it had been empty. But this is vtterly vntrue; for the Water will not goe in by a Fifth part. And I suppose, that that Fifth part is the difference of the lying close, or open, of the Ashes; As we see that Ashes alone, if they be hard pressed, will lye in lesse roome: And so the Ashes with Aire betweene, lye looser; and with Water, closer. For I haue not yet found certainly, that the Water, it selfe, by mixture of Ashes, or Dust, will shrinke or draw into lesse Roome.

It is reported of credit, that if you lay good store of Kernells of Grapes, about the Root of a Vine; it will make the Vine come earlier, and prosper better. It may be tried with other Kernells, laid about the Root of a Plant of the same kinde; As Figgs, Kernells of Apples, &c. The Cause may be, for that the Kernells draw out of the Earth Iuice fit to nourish the Tree, as those that would be Trees of themselues, though there were no Root; But the Root being of greater strength, robbeth and deuoureth the Nourishment, when they haue drawne it: As great Fishes deuoure little.

The Operation of Purging Medicines, and the Causes thereof, haue béene thought to be a great Secret; And so according to the slothfull manner of Men, it is referred to a Hidden Propriety, a Specificall vertue, and a Fourth Qualitie, and the like Shifts of Ignorance. The Causes of Purging are diuers; All plaine and perspicuous; And throughly maintained by Experience. The first is, That whatsoeuer cannot be ouercome and disgested by the Stomacke, is by the Stomacke, either put vp by Vomit, or put downe to the Guts; And by that Motion of Expulsion in the Stomacke, and Guts, other Parts of the Body, (as the Orifices of the Veines, and the like) are moued to expell by Consent. For nothing is more frequent than Motion of Consent in the Body of Man. This Surcharge of the Stomacke, is caused either by the Qualitie of the Medicine, or by the Quantitie. The Qualities are three: Extreme Bitter, as in Aloes, Coloquintida, &c. Loathsome and of horrible taste; As in Agarick, Black Hellebore, &c. And of secret Malignity, and disagreement towards Mans Bodie, many times not appearing much in the Taste; As in Scammony, Mechoacham, Antimony, &c. And note well, that if there be any Medicine, that Purgeth, and hath neither of the first two Manifest Qualities; it is to be held suspected, as a kinde of Poysons; For that it worketh either by Corrosion; or by a secret Malignitie and Enmitie to Nature: And therfore such Medicines are warily to be prepared, and vsed. The Quantitie of that which is taken, doth also cause Parging; As we see in a great Quantitie of New Milke from the Cow; yea and a great Quantitie of Meat; For Surfets many times turne to Purges, both vpwards, and downwards. Therefore we see generally, that the working of Purging Medicines, commeth two or three

houres after the Medicines taken; For that the Stomacke first maketh a proofe, whether it can concoct them. And the like happeneth after Surfets; or Milke in too great Quantitie.

A second Cause is Mordication of the Orifices of the Parts; Especially of the Mesentery veines; As it is seene, that Salt, or any such thing that is sharpe and biting, put into the Fundament, doth prouoke the Part to expell; And Mustard prouoketh Sneezing: And any Sharpe Thing to the Eyes, prouoketh Teares. And therfore we see that almost all Purgers haue a kinde of Twiching and vellication, besides the Griping which commeth of wind. And if this Mordication be in an ouer-high Degree, it is little better than the Corrosion of Poyson; And it commeth to passe sometimes in Antimony; Especially if it be giuen, to Bodies not repleat with Humors; For where Humors abound, the Humors saue the Parts.

The third Cause is Attraction: For I doe not deny, but that Purging Medicines haue in them a direct Force of Attraction; As Drawing Plasters haue in Surgery: And we see Sage, or Bettony brused, Sneezing-powder, and other Powders or Liquors (which the Physitians call Errhines,) put into the Nose, draw Flegme, and water from the Head; And so it is in Apophlegmatismes, and Gargarismes, that draw the Rheume downe by the Pallate. And by this Vertue, no doubt, some Purgers draw more one Humour, and some another, according to the Opinion receiued: As Rubarb draweth Choller; Sean Melancholy; Agarick Flegme; &c. But yet, (more or lesse) they draw promiscuously. And note also, that besides Sympathy, between the Purger and the Humour, there is also another Cause, why some Medicines draw some Humour more than another. And it is, for that some Medicines work quicker than others: And they that draw quick, draw only the Lighter, & more fluide Humours; they that draw flow, worke vpon the more Tough, and Viscous Humours. And therfore Men must beware, how they take Rubarb, and the like, alone, familiarly; For it taketh only the Lightest part of the Humour away, and leaueth the Masse of Humours more obstinate. And the like may be said of Wormewood, which is so much magnified.

The fourth Cause is Flatnosity; For Wind stirred moueth to expell: And we finde that (in effect) all Purgers haue in them a raw Spirit, or Wind; which is the

Principall Cause of Tortion in the Stomach, and Belly. And therfore Purgers leese (most of them) the vertue, by Decoction vpon the Fire; And for that Cause are gluen chiefly in Infusion, Iuyce, or Powder.

The fifth Cause is Compression, or Crushing: As when Water is Crushed out of a Spunge: So we see that Taking Cold moueth Loosenesse by Contraction of the Skinn, and outward Parts; And so doth Cold likewise cause Rheumes, and Defluxions from the Head; And some Astringent Plasters crush out purulent Matter. This kind of Operation is not found in many Medicines: Mirabalanes haue it; And it may be the Barkes of Peaches; For this Vertue requireth an Astriction; but such an Astriction, as is not gratefull to the Body; (For a pleasing Astriction doth rather Binde in the Humours, than Expell them:) And therfore such Astriction is found in Things of an Harrish Taste.

The Sixth Cause is Lubrefaction, and Relaxation. As we see in Medicines Emollient; Such as are Milke, Honey, Mallowes, Lettuce, Mercuriall, Pelletory of the Wall, and others. There is also a secret Vertue of Relaxation in Cold: For the Heat of the Body bindeth the Parts and Humours together, which Cold relaxeth: As it is seene in Vrine, Bloud, Pottage, or the like; which, if they be Cold, breake, and dissolue. And by this kinde of Relaxation, Feare looseneth the Belly; because the Heat retiring inwards towards the Heart, the Gutts and other Parts are relaxed; In the same manner, as Feare also causeth Trembling in the Sinewes. And of this Kinde of Purgers are some Medicines made of Mercury.

The Seuenth Cause is Abstersion; which is plainly a Scouring off, or Incision of the more viscous Humors, and making the Humors more fluide; And Cutting betweene them, and the Part. As is found in Nitrous Water, which scoureth Linnen Cloth (speedily) from the Foulenesse. But this Incision must be by a Sharpnesse, without Astriction: Which wee finde in Salt, Worm-wood, Oxymel, and the like.

There be Medicines, that moue Stooles, and not Vrine; Some other, Vrine, and not Stooles, Those that Purge by Stoole are such as enter not at all, or little into the Mesentery Veines; But either at the first are not digestible by the Stomach, and therefore moue immediatly downwards to the Gutts; Or else are

afterwards reiected by the Mesentery Veines, and so turne likewise downwards to the Gutts; and of these two kindes are most Purgers. But those that moue Vrine, are such, as are well digested of the Stomach, and well receiued also of the Mesenfery Veines; So they come as farre as the Liuer, which sendeth Vrine to the Bladder, as the Whey of Bloud: And those Medicines being Opening and Piercing, doe fortifie the Operation of the Liuer, in sending downe the wheyey Part of the Bloud to the Reines. For Medicines Vrinatiue doe not worke by Reiection, and Indigestion, as Solutiue doe.

There be diuers Medicines, which in greater Quantity, moue Stock, and in smaller, Vrine: And so contrariwise, some that in greater Quantity, moue Vrine, and in Smaller, Stoole. Of the former sort is Rubarb, and some others. The Cause is, for that Rubarb is a Medicine, which the Stomach in a small Quantity doth digest, and ouercome, (being not Flatuous, nor Loathsome;) and so sendeth it to the Mesentery Veines; And so being opening, it helpeth downe Vrine: But in a greater Quantitie, the Stomach cannot ouercome it, and so it goeth to the Gutts. Pepper by some of the Ancients is noted to be of the second sort; which being in small Quantity, moueth wind in the Stomach and Gutts, and so expelleth by Stoole; But being in greater Quantity, dissipateth the Wind; And it selfe gotteth to the Mesentery veines; And so to the Liuer, and Reines; where, by Heating and Opening, it sendeth downe Vrine more plentifully.

Wee haue spoken of Euacuating of the Body; wee will now speake something of the Filling of it by Restoratines in Consumptions, and Emaciating Diseases. In Vegetables, there is one Part that is more Nourishing than another; As Graines, and Roots nourish more, than the Leaues; In so much as the Order of the Foliatanes was put downe by the Pope, as finding Leaues vnable to Nourish Mans Body. Whether there be that difference in the Flesh of Liuing Creatures, is not well inquired: As whether Liuers, and other Entrails, be not more Nourishing, than the Outward Flesh. We find that amongst the Romans, a Gooses Liuer was a great Delicacy; In so much as they had Artificiall Meanes to make it faire, and great; But whether it were more Nourishing, appeareth not. It is certaine, that Marrow is more Nourishing than Fat. And I conceiue that some

Decoction of Bones, and Sinewes, stamped, and well strained, would bee a very Nourishing Broth: Wee finde also that Scotch Skinck, (which is a Pottage of strong Nourishment,) is made with the Knees, and Sinewes of B-est, but long boiled: letty also, which they vse for a Restoratiue, is chiefly made of K-uckles of Veale. The Pulp that is within the Crafish or Crabb, which they spice and butter, is more Nourishing than the Flesh of the Crabb or Crafish. The Yolkes of Egges are clearely more Nourishing than the Whites. So that it should seeme, that the Parts of Liuing Creatures, that lye more Inwards, nourish more than the Outward Flesh: Except it bee the Braine; which the Spirits prey too much vpon, to leaue it any great Vertue of Nourishing. It seemeth for the Nourishing of Aged Men, or Men in Consumptions, some such thing should be Deuised, as should be halfe Chylus, before it be put into the Stomach.

Take two large Capons; perboile them vpon a soft fire, by the space of an houre, or more, till in effect all the Bloud be gone. Adde in the Decoction the Pill of a Sweet Limon, or a good part of the Pill of a Citron, and a little Mace. Cut off the Shanckes, and throw them away. Then with a good strong Chopping-knife, mince the two Capons, bones and all, as small as ordinary Minced Meat; Put them into a large neat Boulter; Then take a Kilderkin, sweet, and well feasoned, of foure gallons of Beere, of 8.-. strength, new as it commeth from the Tunning; Make in the Kilderkin a great Bung-hole of purpose: Then thrust into it, the Boulter (in which the Capons are) drawne out in length; Let it steepe in it three Dayes, and three Nights, the Bung-hole open, to worke; Then close the Bung-hole, and so let it continue, a Day and a halfe; Then draw it into bottles, and you may drinke it well after three dayes Botteling; And it will last six weeks (approued.) It drinketh fresh, flowreth and mantleth exceedingly; It drinketh not newish at all; It is an excellent Drinke for a Consumption, to be drunke either alone, or Carded with some other Beere. It quencheth Thirst, and hath no whit of windinesse. Note, that it is not possible, that Meat and Bread, either in Broths, or taken with Drink, as is vsed, should get forth into the veines, and outward Parts, so finely, and easily, as when it is thus Incorporate, and made almost a Chylus aforehand.

Triall would bee made of the like Brew with Potado Roots, or Burr Roots, or the Pith of Artichoakes, which are nourishing Meats: It may be tried also, with other flesh; As Phesant, Partridge, Young Porke, Pigge, Venison, especially of young Deere, &c.

A Mortresse made with the Brawne of Capons, stamped, and strained, and mingled (after it is made) with like quantitie, (at the least,) of Almond Butter; is an excellent Meat to Nourish those that are weake; Better than Blanck-Manger, or Ielly: And so is the Cullice of Cocks, boyled thick with the like Mixture of Almond Butter: For the Mortresse, or Cullice, of it selfe, is more Sauoury and strong; And not so fit for Nourishing of weake Bodies; But the Almonds that are not of so high a taste as Flesh, doe excellently qualifie it.

Indian Maiz hath (of certaine) an excellent Spirit of Nourishment; But it must be throughly boyled, and made into a Maiz-Creame like a Barley Creame. I iudge the same of Rize, made into a Creame; For Rize is in Turky, and other Countries of the East, most fed vpon; But it must be throughly boyled in respect of the Hardnesse of it: And also because otherwise it bindeth the Body too much.

Pistachoes, so they be good, and not musty, ioyned with Almonds in Almond Milke; Or made into a Milke of themselues, like vnto Almond Milke, but more greene, are an excellent Nourisher. But you shall doe well, to adde a little Ginger, scraped, because they are not without some subtill windinesse

Milke warme from the Cow, is found to be a great Nourisher, and a good Remedy in Consumptions: But then you must put into it, when you milke the Cow, two little bagges; the one of Powder of Mint, the other of Powder of Red Roses; For they keepe the Milke somewhat from Turning, or Crudling in the stomach; And put in Sugar also, for the same cause, and partly for the Tasts sake; But you must drinke a good draught that it may stay lesse time in the stomach, left it Cruddle: And let the Cup into which you milke the Cow, bee set in a greater Cup of hot water, that you may take it warme. And Cow-milke thus prepared, I iudge to be better for a Consumption, than Asse-milke, which (it is true) turneth not so easily, but it is a little harrish; Marry it is more proper for Sharpnesse of Vrine, and Exulceration of the Bladder, and all manner of

Lenifyings. Womans milke likewise is prescribed, when all faile; but I commend it not; as being a little too neere the Iuyce of Mans Body, to be a good Nourisher; Except it be in Infants, to whom it is Naturall.

Oyle of Sweet Almonds, newly drawen, with Sugar, and a little Spice, spread vpon Bread tosted, is an Excellent Nourisher; But then to keepe the Oyle from frying in the Stomach, you must drinke a good draught of Milde Beere after it; And to keepe it from relaxing the Stomach too much, you must put in a little Powder of Cinnamon.

The Yolkes of Eggs are of themselues so well prepared by Nature for Nourishment; As (so they be Potched, or Reare boiled) they need no other Preparation, or Mixture; yet they may be taken also rawe, when they are new laid, with Malmesey, or Sweet wine; You shall doe well to put in some few Slices of Eryngium Roots, and a little Amber-grice; For by this meanes, besides the immediate Facultie of Nourishment, such Drinke will strengthen the Backe; So that it will not draw downe the Vrine too fast; For too much Vrine doth alwaies hinder Nourishment.

Mincing of meat, as in Pies, and buttered Minced Meat, saueth the Grinding of the Teeth; And therefore, (no doubt) it is more Nourishing; Especially in Age; Or to them that haue weake Toeth; But the Butter is not so proper for weake Bodies; And therfore it were good to moisten it with a little Claret wine, Pill of Limon, or Orenge, cut small, Sugar, and a very little Cinnamon, or Nutmegg. As for Chaetts, which are likewise minced Meat, in stead of Butter, and Fat, it were good to moisten them, partly with Creame, or Almond, or Pistachomilke, or Barly, or Maiz Creame; Adding a little Coriander Seed, and Carraway Seed, and a very little Saffron. The more full Handling of Alimentation we reserue to the due place.

Wee haue hitherto handled the Particulars which yeeld best, and easiest, and plentifullest Nourishment; And now we will speake of the best Meanes of Conueying, and Conuerting the Nourishment.

The First Meanes is, to procure that the Nourishment may not be robbed, and drawen away; wherin that, which we haue already said, is very Materiall; To

prouide, that the Reines draw not too strongly an ouer-great Part of the Bloud into Vrine. To this adde that Precept of Aristotle, that Wine be forborne in all Consumptions; For that the Spirits of the Wine, doe prey vpon the Roseide Iuyce of the Body, and inter-common with the Spirits of the Body, and so deceiue and robbe them of their Nourishment. And therefore if the Consumption growing from the weaknes of the Stomach, doe force you to vse Wine; let it alwaies be burnt, that the Quicker Spirits may euaporate; or at the least quenched with two little wedges of Gold, six or seuen times repeated. Adde also this Prouision, That there be not too much Expence of the Nourishment, by Exhaling, and Sweating: And therfore if the Patient be apt to sweat, it must be gently restrained. But chiefly Hippocrates Rule is to bee followed; who aduiseth quite contrary to that which is in vse: Namely, that the Linnen, or Garment next the Flesh, be in Winter drie, and oft changed; And in Sommer seldome changed, and smeared ouer with Oyle; For certaine it is, that any Substance that is fat, doth a little fill the Pores of the Body, and stay Sweat, in some Degree. But the more cleanly way is, to haue the Linnen smeared lightly ouer, with Oyle of Sweet Almonds; And not to forbeare shifting as oft as is fit.

The Second Meanes is, to send forth the Nourishment into the Parts, more strongly; For which, the working must be by Strengthening of the Stomach; And in this, because the Stomach is chiefly comforted by Wine, and Hot things, which otherwise hurt; it is good to resort to Outward Applications to the Stomach: Wherin it hath beene tried, that the Quilts of Roses, Spices, Mastick, Wormewood, Mint, &c. are nothing so helpfull, as to take a Cake of New bread, and to bedew it with a little Sack, or Alegant; And to drie it; And after it be dried a little before the Fire, to put it within a cleane Napkin, and to lay it to the Stomach: For it is certaine, that all Flower hath a potent Vertue of Astriction; In so much as it hardeneth a peece of flesh, or a Flower, that is laid in it: And therefore a Bagge quilted with Bran, is likewise very good; but it drieth somewhat too much; and therefore it must not lye long.

The Third Meanes (which may be a Branch of the former) is to send forth the Nourishment the better by Sleepe. For we see, that Beares, and other Creatures

that sleepe in the Winter, wax exceeding fat: And certaine it is, (as it is commonly beleeued) that Sleepe doth Nourish much; Both for that the Spirits do lesse spend the Nourishment in Sleepe, then when liuing Creatures are awake: And because (that which is to the present purpose) it helpeth to thrust out the Nourishment into the Parts. Therefore in Aged men, and weake Bodies, and such as abound not with Choller, a short Sleepe after dinner doth helpe to Nourish; For in such Bodies there is no feare of an ouer-hastie Disgestion, which is the Inconuenience of Postmeridian Sleepes. Sleepe also in the Morning, after the taking of somewhat of easie Digestion; As Milke from the Cow, Nourishing Breth, or the like; doth further Nourishment: But this would bee done, sitting vpright, that the Milke or Broth may passe the more speedily to the bottome of the Stomach.

The Fourth Meanes is to prouide that the Parts themselues may draw to them the Nourishment strongly. There is an Excellent Obseruation of Aristotle; That a great Reason, why Plants (some of them) are of greater Age, than Liuing Creatures, is, for that they yearely put forth new Leaues, and Boughes; whereas Liuing Creatures put forth (after their Period of Growth,) nothing that is young, but Haire and Nailes; which are Excrements, and no Parts. And it is most certaine, that whatsoeuer is young, doth draw Nourishment better, than that which is Old; And then (that which is the Mystery of that Obseruation) young Boughes, and Leaues, calling the Sap vp to them; the same Nourisheth the Body, in the Passage. And this we see notably proued also, in that the oft Cutting, or Polling of Hedges, Trees, and Herbs, doth conduce much to their Lasting. Transferre therefore this Obseruation to the Helping of Nourishment in Liuing Creatures: The Noblest and Principall Vse whereof is, for the Prolongation of Life; Restauration of some Degree of Youth; and Inteneration of the Parts: For certaine it is, that there are in Liuing Creatures Parts that Nourish, and Repaire easily; And Parts that Nourish and repaire hardly, And you must refresh, and renew those that are easie to Nourish, that the other may be refreshed, and (as it were) Drinke in Nourishment, in the Passage. Now wee see that Draught Oxen, put into good Pasture, recouer the Flesh of young Beese; And Men after long

Emaciating Diets, wax plumpe, and fat, and almost New: So that you may surely conclude, that the frequent and wise Vse of those Emaciating Diets, and of Purgings; And perhaps of some kinde of Bleeding; is a principall Meanes of Prolongation of Life; and Restoring some Degree of Youth: For as we haue often said, Death commeth vpon Liuing Creatures like the Torment of McZentius;

Mortua quinetiam iungebat Corporavinis,

Componens Manibus{que} Manus, at{que} Oribus Ora.

For the Parts in Mans Body easily reparable, (as Spirits, Bloud, and Flesh,) die in the Embracement of the Parts hardly reparable, (as Bones, Nerues, and Membranes;) And likewise some Entrails (which they reckon amongst the Spermaticall Parts) are hard to repaire: Though that Diuision of Spermaticall, and Menstrnall Parts, be but a Conceit. And this same Obseruation also may be drawne to the present purpose of Nourishing Emaciated Bodies: And therefore Gentle Frication draweth forth the Nourishment, by making the Parts a little hungry, and heating them; whereby they call forth Nourishment the better. This Frication I wish to be done in the Morning. It is also best done by the Hand, or a peece of Scarlet wooll, wet a little with Oile of Almonds, mingled with a small Quantity of Bay-sals, or Saffron. We see that the very Currying of Horses doth make them fat, and in good liking.

The Fifth Meanes is, to further the very Act of Assimilation of Nourishment; which is done by some outward Emollients, that make the Parts more apt to Assimilate. For which I haue compounded an Ointment of Excellent Odour, which I call Roman Ointment, vide the Receit. The vse of it would be betweene Sleepes; For in the latter Sleepe the Parts Assimilate chiefly.

There be many Medicines, which by themselues would doe no Cure, but perhaps Hurt; but being applyed in a certaine Order, one after another, doe great Cures. I haue tried (my selfe) a Remedy for the Gout, which hath seldome failed, but driuen it away in 24. Houres space: It is first to apply a Pultasse; Of which vide the Receit; And then a Bath or Fomentation, of which vide the Receit; And then a Plaister, vide the Receit. The Pultasse relaxeth the Pores, and maketh the Humour apt to Exhale. The Fomentation calleth forth the Humour by Vapours;

But yet in regard of the way made by the Pultasse. Draweth gently; And therfore draweth the Humour out; and doth not draw more to it; For it is a Gentle Fomentation, and hath withall a Mixture, (though very little) of some Stupefactine. The Plaister is a Moderate Astringent Plaister, which repelleth New Humour from falling. The Pultasse alone would make the Part more soft, and weake; And apter to take the Defluxion and Impression of the Humour. The Fomentation alone, if it were too weake, without way made by the Pultasse, would draw forth little; If too strong, it would draw to the Part, as well as draw from it. The Plaister alone, would pen the Humour already contained in the Part, and so exasperate it, as well as forbid new Humour. Therefore they must be all taken in Order, as is said. The Pultasse is to be laid to for two or three Houres: The Fomentation for a Quarter of an Houre, or somewhat better, being vsed hot, and seuen or eight times repeated: The Plaister to continue on still, till the Part be well confirmed.

There is a secret Way of Cure, (vnpractized;) By Assuetude of that which in it selfe hurteth.Poysons haue beene made, by some, Familiar, as hath beene said. Ordinary keepers of the Sicke of the Plague, are seldome infected. Enduring of Torture, by Custome, hath been made more casie: The Brooking of Enormous Quantity of Meats, and so of Wine or Strong Drinke, hath beene, by Custome, made to be without Surfet, or Drunkennesse. And generally Diseases that are Chronicall, as Coughes., Phthisickes, some kindes of Palseyes, Lunacies, &c. are most dangerous at the first: Therefore a wise Physitian will consider whether a Disease be Incurable; Or whether the Iust Cure of it be not full of perill; And if he finde it to bee such, let him resort to Palliation; And alleuiate the Symptome, without busying himselfe too much with the perfect Cure: And many times, (if the Patient be indeed patient,) that Course will exceed all Expectation. Likewise the Patient himselfe may striue, by little and little, to Ouercome the Symptome, in the Exacerbation, and so, by time, turne Suffering into Nature.

Diuers Diseases, especially Chronicall, (such as Quartan Agues;) are somtimes cured by Surset, and Excesses; As Excesse of Meat, Excesse of Drinke, Extraordinary Fasting, Extraordinary Stirring, or Lassitude, & the like.

The Cause is, for that Diseases of Cotinuance get an Adue¯titious Strength fro¯ Custome, besides their Materiall Cause from the Humours: So that the Breaking of the Custome doth leaue them only to their first Cause; which if it be any thing weake will fall off. Besides, such Excesses doe Excite and Spur Nature, which thereupon riseth more forcibly against the Disease.

There is in the Body of Man a great Consent in the Motion of the seuerall Parts. We see, it is Childrens sport, to proue whether they can rub vpon their Brest with one hand, and pat vpon their Forehead with another; And straight-waies, they shall sometimes rubbe with both Hands, or pat with both hands. We see, that when the Spirits, that come to the Nosthrills, expell a bad Sent, the Stomach is ready to Expell by Vomit. We finde that in Consumptions of the Lungs, when Nature cannot expell by Cough, Men fall into Fluxes of the Belly, and then they dye. So in Pestilent Diseases, if they cannot be expelled by Sweat, they fall likewise into Loosenesse, and that is commonly Mortall. Therfore Physitians should ingeniously contriue, how by Motions that are in their Power, they may excite Inward Motions that are not in their Power, by Consent: As by the Stench of Feathers, or the like, they cure the Rising of the Mother.

Hippocrates Aphorisme, In Morbis minus, is a good profound Aphorisme. It importeth, that Diseases, contrary to the Complexion, Age, Sexe, Season of the yeare, Diet, &c. are more dangerous, than those that are Concurrent. A Man would thinke it should be otherwise; For that, when the Accident of Sicknesse, and the Naturall Disposition, doe second the one the other, the Disease should be more forcible: And so (no doubt) it is; if you suppose like Quantity of Matter. But that, which maketh good the Aphorisine, is; Because such Diseases doe shew a greater Collection of Matter, by that they are able to ouercome those Naturall Inclinations to the Contrary. And therefore in Diseases of that kinde, let the Physitian apply himselfe more to Purgation, than to Alteration; Because the Offence is in the Quantity; and the Qualities are rectified of themselues.

Physitians do wisely prescribe, that there be Preparatiues vsed before Iust Purgations; For certaine it is, that Purgers doe many times great Hurt, if the Body be not accommodated, both before, and after the Purging. The Hurt that

they doe, for want of Preparation before Purging, is by the Sticking of the Humours, and their not comming faire away; Which causeth in the Body great Perturbations, and ill Accidents, during the Purging; And also, the diminishing, and dulling of the Working of the Medicine it selfe, that it purgeth not sufficiently. Therefore the worke of Preparation is double; To make the Humours fluide, and mature; And to make the Passages more open: For both those helpe to make the Humours passe readily. And for the former of these, Sirrups are most profitable; And for the Latter, Apozumes, or Preparing Broaths; Clisters also helpe, lest the Medicine stop in the Guts, and worke gripingly. But it is true, that Bodies abounding with Humours; And fat Bodies; And Open weather; are Preparatines in themselues; because they make the Humours more fluide. But let a Physitian beware, how he purge after hard Frostie Weather, and in a Leane Body, without Preparation. For the Hurt, that they may doe after Purging; It is caused by the Lodging of some Humours in ill Places: For it is certaine, that there be Humours, which somewhere placed in the Body, are quiet, and doe little hurt; In other Places, (especially Passages,) doe much mischiefe. Therefore it is good, after Purging, to vse Apozumes, and Broths, not so much Opening as those vsed before Purging, but Absterfine and Mundifying Clisters also are good to conclude with, to draw away the Reliques of the Humours, that may haue descended to the Lower Region of the Body.

Bloud is stanched diuers waies. First by Astringents, and Repercussiue Medicines. Secondly by Drawing of the Spirits and Bloud inwards; which is done by Cold; As Iron, or a Stone laid to the neck doth stanch the Bleeding at the Nose; Also it hath beene tryed, that the Testicles, being put into sharp Vineger, hath made a suddaine Recesse of the Spirits, and stanched Bloud. Thirdly by the Recesse of the Bloud by Sympathy. So it hath beene tried, that the part that bleedeth, being thrust into the Body of a Capon, or Sheepe, new ript and bleeding, hath stanched Bloud; The Bloud, as it seemeth, sucking and drawing vp, by similitude of substance, the Bloud it meeteth with, and so it selfe going backe. Fourthly by Custome and Time; So the Prince of Aurange, in his first hurt, by the Spanish Boy, could finde no meanes to stanch the Bloud, either by

Medicine or Ligament; but was faine to haue the Orifice of the Wound stopped by Mens Thumbes, succeeding one another, for the space at least of two Dayes; And at the last the bloud by Custome onely retired. There is a fifth Way also in vse, to let Bloud in an Aduerse Part, for a Revulsion.

It helpeth, both in Medicine, and Aliment, to Change and not to continue the same Medicine & Aliment still. The Cause is, for that Nature by continuall Vso of any Thing, groweth to a Sacietie, and Dulnesse, either of Appetite, or Working. And we see that Assuetude of Things Hurtfull doth make them leese their force to Hurt; As Poyson, which with vse some haue brought themselues to brooke. And therefore it is no maruaile, though Things helpfull, by Custome, leese their force to Helpe. I count Intermission almost the same thing with Change; For that, that hath beene intermitted, is after a fort new.

It is found by Experience, that in Diets of Guaiacum, Sarza, and the like (especially if they be strict,) the Patient is more troubled in the beginning, then after continuance; Which hath made some of the more delicate Sort of patients, giue them ouer in the middest; Supposing that if those Diets trouble them so much at first, they shall not be able to endure them to the End. But the Cause is, for that all those Diets, doe drie vp Humours, Rheumes, and the like; And they cannot Drie vp vntil they haue first attenuated; And while the Humour is attenuated, it is more Fluid, then it was before, and troubleth the Body a great deale more vntill it be dried vp, and consumed. And therefore Patients must expect a due time, and not checke at them at the first.

The Producing of Cold is a thing very worthy the Inquisition; both for Vse, and Disclosure of Causes. For Heat and Cold are Natures two Hands, whereby she chiefly worketh: And Heat we haue in readinesse, in respect of the Fire; But for Cold we must staie till it commeth; or seecke it in deepe Caues, or high Mountaines: And when all is done, we cannot obtaine it in any great degree: For Furnaces of Fire are farre hotter, then a Sommers Sunne; But Vaults, or Hills are not much Colder then a Winters Frost.

The first Meanes of Producing Cold, is that which Nature presenteth vs withall; Namely the Expiring of Cold out of the Inward Parts of the Earth in

Winter, when the Sun hath no power to ouercome it; the Earth being (as hath beene noted by some) Primum Frigidum. This hath beene asserted, as well by Auncient as by Moderne Philosophers: It was the Tenet of Parmenides. It was the opinion of the Authour of the discourse in Plutarch (for I take it that booke was not Plutarches owne) De prime Frigide. It was the opinion of Telesius, who hath renewed the Philosophy of Parmenides, and is the best of the Nouellists.

The Second Cause of Cold is the Contact of Cold Bodies; For Cold is Actiue and Transitiue into Bodies Adiacent, as well as Heat: which is seene in those things that are touched with Snow or Cold water. And therefore, whosoeuer will be an Inquirer into Nature, let him resort to a Conseruatory of Snow and Ice; Such as they vse for delicacy, to coole Wine in Summer: Which is a Poore and Contemptible vse, in respect of other vses, that may bee made of such Conseruatories.

The Third Cause is the Primary Nature of all Tangible bodies: For it is well to be noted, that all Things whatsoeuer (Tangible) are of themselues Cold; Except they haue an Accessory Heat by fire; Life; or Motion: For euen the Spirit of Wine, or Chy-icall Oyles, which are so hot in Operation, are to the first Touch Cold; And Aire it selfe compressed, and Condensed a little by blowing, is Cold.

The Fourth Cause is the Density of the Body; For all Dense Bodies are Colder then most other Bodies; As Mettalls, Stone, Glasse; And they are longer in Heating than Softer Bodies. And it is certaine, that Earth, Dense, Tangible, hold all of the Nature of Cold. The Cause is, for that all Matters Tangible being Cold, it must needs follow, that where the Matter is moist Congregate, the Cold is the greater.

The Fifth Cause of Cold, or rather of increase and vehemence of Cold, is a Quicke Spirit inclosed in a Cold Body: As will appeare to any that shall attentiuely consider of Nature in many Instances. Wee see Nitre (which hath a Quicke Spirit) is Cold; more Cold to the Tongue, then a Stone; So Water is Colder then Oile, because it hath a Quicker Spirit; For all Oile, though it hath the Tangible Parts better digested then Water, yet hath it a duller Spirit: So Snow is Colder then Water, because it hath more Spirit within it: So we see that Salt put

to Ice (as in the producing of the Artificiall Ice) increaseth the Actiuity of Cold: So some In — cta which haue Spirit of Life, as Snakes, and Silkwormes, are, to the touch, Cold. So Quick-filuer is the Coldest of Mettals, because it is Fullest of Spirit.

The Sixth Cause of Cold is the Chasing and Driuing away of Spirits, such as haue some Degree of Heat: For the Banishing of the Heat must needs leaue any Body Cold. This we see in the Operation of Opium, and Stupefactiues, vpon the Spirits of liuing Creatures: And it were not amisse to trie Opium, by laying it vpon the Top of a Weather-glasse, to see whether it will contract the Aire: But I doubt it will not succeed: For besides that the vertue of Opium will hardly penetrate thorow such a Body as Glasse, I conceiue that Opium, and the like, make the Spirits fly rather by Malignity, then by Cold.

Seuenthly, the same Effect must follow vpon the Exhaling or Drawing out of the warme Spirits, that doth vpon the Flight of the Spirits. There is an Opinion, that the Moone is Magneticall of Heat, as the Sun is of Cold, and Moisture: It were not amisse therefore to trie it, with Warme waters; The one exposed to the Beames of the Moone; the other with some Skreene betwixt the Beames of the Moone and the water; As we vse to the Sunne for Shade; And to see whether the former will coole sooner. And it were also good to inquire, what other Meanes there may be, to draw forth the Exile heat, which is in the Aire; for that may be a Secret of great Power to Produce Cold weather.

We haue formerly set downe the Meanes of turning Aire into water, in the Experiment 27. But because it is Magnale Nature; And tendeth to the subduing of a very great effect; And is also of Manifold vse; we will adde some Instances in Consort that giue light thereunto.

It is reported by some of the Ancients, that Sailers haue vsed, euery Night, to hang Fleeces of wooll on the sides of their Ships, the Wooll towards the water; And that they haue crushed fresh Water out of them, in the Morning, for their vse. And thus much we haue tried, that a Quantitie of Wooll tied loose together, being let downe into a deepe Well; And hanging in the Middle, some three

Fathome from the water, for a night, in the Winter time; increased in weight, (as I now remember) to a fifth Part.

It is reported by one of the Ancients, that in Lydia, neare Pergamus, there were certaine Worke-men, in time of Warres, fled into Caues; And the Mouth of the Caues being stopped by the Enemies, they were famished. But long time after the dead Bones were found; And some Vessels which they had carried with them; And the vessels full of Water; And that Water, thicker, and more towards Ice, than Common Water: which is a Notable Instance of Condensation, and Induration, by Buriall under Earth, (in Caues,) for long time; And of version also (as it should seeme,) of Aire into Water; if any of those vessels were Emptie. Trie therefore a small Bladder hung in Snow; And the like in Nitre; And the like in Quick-filuer: And if you finde the Bladders fallen, or shrunke; you may be sure the Aire is condensed by the Cold of those Bodies; As it would be in a Caue vnder Earth.

It is reported of very good credit, that in the East Indies, if you set a Tub of Water open, in a Roome where Cloues are kept, it will be drawne dry in 24 houres; Though it stand at some distance from the Cloues. In the Countrey, they vse many times, in deceit, when their wooll is new shorne, to set some Pailes of water by, in the same Roome; to increase the weight of the wooll: But it may be, that the Heat of the Wooll, remaining from the body of the Sheepe; or the Heat gathered by the lying close of the wooll, helpeth to draw the watry Vapour; But that is nothing to the Version.

It is Reported also credibly, that Wooll new shorne, being laid casually vpon a Vessell of Verinyce, after some time, had drunke vp a great part of the Veriuyce, though the Vessell were whole without any Flaw and had not the Bung-hole open. In this Instance, there is (vpon the by) to be noted, the Percolation, or Suing of the Veriuyce through the wood; For Veriuyce of it selfe would neuer haue passed thorow the wood: So as, it seemeth, it must be first in a kinde of Vapour, before it passe.

It is especially to be noted, that the Cause, that doth facilitate the Version of Aire into water, when the Aire is not in grosse, but subtilly mingled with

Tangible Bodies, is, (as hath beene partly touched before,) for that Tangible Bodies haue an Antipathy with Aire; And if they finde and Liquid Body, that is more dense, neare them, they will draw it: And after they haue drawne it, they will condense it more, and in effect incorporate it; For wee see that a Spunge, or Wooll, or Sugar, or a Woollen cloth, being put but in part, in Water, or Wine, will draw the Liquour higher, and beyond the place, where the Water or wine commeth. We see also, that Wood, Lute-strings, and the like, doe swell in moist Seasons: As appeareth by the Breaking of the Strings, the Hard Turning of the Pegs, and the Hard drawing forth of Boxes, and Opening of Wainseet deeres; which is a kinde of Infusion: And is much like to an Infusion in water, which will make wood to swell: As we see in the Filling of the Chops of Boules, by laying them in water. But for that part of these Experiments, which concerneth Attraction; we will reserue it to the proper Title of Attraction.

There is also a Version of Aire into water, seene in the Sweating of Marbles, and other Stones. And of Wainsces before and in moist weather: This must be, either by some Moisture the Body yeeldeth; Or else by the Moist Aire thickned against the hard body. But it is plaine, that it is the latter; For that we see Wood painted with Oyle Colour, will sooner gather drops in a moist Night, than Wood alone: which is caused by the Smoothnesse and Closenesse; which letteth in no part of the Vapour, and so turneth it backe, and thickeneth it into Dew. We see also, that Breathing vpon a Glasse, or Smooth body, giueth a Dew; And in Frosty Mornings (such as we call Rime frosts) you shall finde drops of Dew vpon the Inside of Glasse-windowes; And the Frost it selfe vpon the ground is but a Version or Condensation, of the Moist vapours of the Night, into a watry substance: Dewes likewise, and Raine, are but the Returnes of Moist vapours Condensed; The Dew, by the Cold onely of the Sunnes departure, which is the gentler Cold; Raines, by the Cold of that, which they call the Middle Region of the Aire; which is the more violent Cold.

It is very probable (as hath beene touched) that that, which will turne Water into Ice, will likewise turne Aire Some Degree nearer vnto water. Therefore trie the Experiment of the Artificiall Turning water into Ice (whereof we shall speake

in another place) with Aire in place of water, and the Ice about it. And although it be a greater Alteration to turne Aire into water, than water into Ice: yet there is this Hope, that by Continuing the Aire longer time, the effect will follow; For that Artificiall Conuersion of water into Ice, is the worke of a few Houres; And this of Aire may be tried by a Moneths space, or the like.

Induration, or Lapidification, of Substances more Soft, is likewise another degree of Condensation; And is a great Alteration in Nature. The Effecting and Accelerating thereof is very worthy to be inquired. It is effected by three Meanes. The first is by Cold; vvhose Property is to Condense, and constipate, as hath beene said. The Second is by Heat; which is not proper, but by consequence; For the Heat doth attenuate; And by Attenuation doth send forth the Spirit and moister Part of a Body; And vpon that, the more grosse of the Tangible Parts doe contract and serre themselues together; Both to Auoid Vacuums (as they call it;) And also to Munite themselues against the Force of the Fire, which they haue suffered. And the Third is by Assimilation; when a Hard Body Assimilateth a Soft, being contiguous to it.

The Examples of Induration, taking them promiscuously, are many: As the Generation of Stones within the Earth, which at the first are but Rude Earth, or Clay: And so of Mineralls, which come (no doubt) at first, of luyces Concrete, which afterward indurate: And so of Porcellane, which is an Artificiall Cement, buried in the Earth a long time: And so the Making of Bricke, and Tile: Also the Making of Glasse, of a certaine Sand, and Brake-Roots, and some other Matters: Also the Exudations of Rock-Diamonds, and Crystall, which harden with time: Also the Induration of Bead-Amber, which at first is a soft Substance; As appeareth by the Flies, and Spiders, which are found in it; And many more: But wee will speake of them distinctly.

For Indurations by Cold, there bee few Trialls of it; For wee haue no strong or intense Cold here on the Surface of the Earth, so neare the Beames of the Sunne, and the Heauens. The likeliest Triall is by Snow, and Ice; For as Snow and Ice, especially being holpen, and their Cold actiuated by Nitre, or Salt, will turne Water into Ice, and that in a few houres; So it may be, it will turne wood,

or Stiffe Clay, into Stone, in longer time. Put therefore, into a Conseruing Pit of Snow, and Ice, (adding some quantity of Salt, and Nitre,) a Peece of Wood, or a Peece of Tough Clay, and let it lye a Moneth, or more.

Another Triall is by Metalline Waters, which haue virtuall Cold in them. Put therefore Wood, or Clay, into Smiths water, or other Metalline water; And try whether it will not harden in some reasonable time. But I vnderstand it, of Metalline waters, that come by Washing, or Quenching; And not of Strong Waters that come by dissolution; for they are too Corrosiue to consolidate.

It is already found, that there are some Naturall Spring-waters, that will Inlapidate Wood; So as you shall see one peece of Wood, whereof the Part aboue the Water shall continue Wood; And the Part vnder the Water shall be turned into a kinde of Grauelly Stons. It is likely those Waters are of some Metalline Mixture; But there would be more particular Inquiry made of them. It is certaine, that an Egge was found, hauing lien many yeeres in the bottome of a Moate, where the Earth had somewhat ouergrowen it; And this Egge was comen to the Hardnesse of a Stone; And had the Colours of the white and Yolke perfect: And the Shell shining in small graines like Sugar, or Alablaster.

Another Experience there is of Induration by Cold, which is already found; which is, that Metalls, themselues are hardned by often Heating and Quenching in Cold Water: For Cold euer worketh most potently vpon Heat Precedene.

For Induration by Heat it must be considered, that Heat, by the Exhaling of the Moister Parts, doth either harden the Body; As in Bricks, Tiles, &c; Or if the Heat be more fierce, maketh the grosser part it selfe, Runne and Melt; As in the making of ordinary Glosse; And in the Vitrification of Earth, (As wee see in the Inner Parts of Farneces;) And in the Vitrification of Brick; And of Mettals. And in the former of these, which is the Hardening by baking, without Melting, the Heat hath these degrees; First it Indurateth; and then maketh Fragile; And lastly it doth Inciuerate and Calcinate.

But if you desire to make an Induration with Toughnesse, and lesse Fragility; A middle way would be taken; Which is that which Artistotle hath well noted; But would be throughly verified. It is, to decoct Bodies in water, for two or three

dayes; But they must bee such Bodies, into which the Water will not enter; As Stone, and Metall. For if they be Bodies into which the Water will enter, then long Seething, will rather Soften than indurate them. As hath beene tried in Eggs &c. Therefore, Softer Bodies must be put into Bottles; And the Bottles hung into Water seething, with the mouths open, aboue the Water; that no Water may get in; For by this Meaues, the virtuall Heat of the Water will enter; And such a Heat, as will not make the Body adust, or fragile; But the Substance of the Water will be shut out. This Experiment wee made; And it sorted thus. It was tried with a Peece of Free-stone, and with Pewter, put into the Water at large. The Free-stone we found receiued in some water; For it was softer, and easier to scrape, then a peece of the same Stone kept drie. But the Pewter into which no water could enter, became more white, and liker to Siluer, and lesse flexible, by much. There were also put into an Earthen Bottle, placed as before, a good Pellet of Clay, a Peece of Cheese, a Peece of Chalke, and a Peece of Free-stone. The Clay, came forth almost of the Hardnesse of Stone; The Cheese likewise very hard, and not well to be cut: The Chalke and the Free-stone much harder than they were. The colour of the Clay inclined not a whit to the Colour of Bricke, but rather to white, as in ordinary Drying by the Sunne. Note, that all the former Trialls were made by a Boyling vpon a good hot Fire, renewing the water as it consumed, with other hot water; But the Boyling was but for twelue houres onely; And it is like that the Experiment would haue beene more effectuall, if the Boyling had beene for two or three daies, as we prescribed before.

As touching Assimilation, (for there is a degree of Assimilation euen in Inanimate bodies) wee see Examples of it in some Stones in ClayGrounds, lying neare to the top of the Earth, where Pebble is; In which you may manifestly see diuers Pebbles gathered together, and a Crust of Cement or Stone betweene them, as hard as the Pebbles themselues: And it were good to make a Triall of purpose, by taking Clay, and putting in it diuers Pebble-Stones, thicke set, to see whether in continuance of time, it will not be harder then other Clay of the same lump, in which no Pebbles are set. Wee see also in Ruines of old Walls, especially towards the bottome, the Morter will become as hard as the Brick;

wee see also, that the Wood on the sides of Vessles of Wine, gathereth a Crust of Tartar, harder then the wood it selfe; And Scales likewise grow to the Teeth, harder then the Teeth themselues.

Most of all, Induration by Assimilation appeareth in the Bodies of Trees, and liuing Creatures: For no Nourishment that the Tree receiueth, or that the liuing Creature receiueth, is so hard as Wood, Bone, or Horne, &c. but is Indurated after by Assimilation.

The Eye of the vnderstanding, is like the Eye of the Sense: For as you may see great Obiects through small Crannies, or Leuells, So you may see great Axiomes of Nature, through small and Contemptible Instances. The Speedy Depredation of Aire vpon watry Moisture, and Version of the same into Aire, appeareth in nothing more visible, than in the sudden Discharge, or vanishing, of a little Cloud of Breath, or Vapour, from Glasse, or the Blade of a Sword, or any such Polished Body; Such as doth not at all Detaine, or Imbibe the Moisture; For the Mistinesse scattereth and breaketh vp suddenly. But the like Cloud, if it were Oyly, or Fatty, will not discharge; Not because it sticketh faster; But because Aire preyeth vpon Water; And Flame, and Fire, vpon Oyle; And therefore, to take out a Spot of Grease, they vse a Coale vpon browne Paper; because Fire worketh vpon Grease, or Oyle, as Aire doth vpon Water. And we see Paper oyled, or Wood oyled, or the like last long moist; but Wet with Water, drie, or putrifie sooner, The Cause is, for that Aire meddleth little with the Moisture of Oyle.

There is an Admirable demonstration, in the same trifling Instance of the little Cloud vpon Glasse, or Gemmes or Blades of Swords, of the Force of Vnion, euen in the least Quantities, and weakest Bodies, how much it Conduceth to Preseruation of the present Forme; And the Resisting of a New. For marke well the discharge of that Cloud; And you shall see it euer breake vp, first in the Skirts, and last in the middest. We see likewise, that much Water draweth forth the Iuyce of the Body Infused; But little water, is imbibed by the Body: And this is a Principall Cause, why in Operation vpon Bodies, for their Version or Alteration, the Triall in great Quantities, doth not answer the Triall in small; And

so deceiueth many; For that (I say) the greater Body, resisteth more any Alteration of Forme, and requireth farre greater Strength in the Actiue Body, that should subdue it.

We haue spoken before, in the fifth Instance, of the Cause of Orient Colours, in Birds; which is by the Finenesse of the Strainer; we will now endeuour to reduce the same Axione to a Worke. For this Writing of our Sylue Syluerum, is (to speake properly) not Neturall History, but a high kinde of Naturall Magicke. For it is not a Description only of Nature, but a Breaking of Nature, into great and strange Workes. Trie therefore, the Anointing ouer of Pigeons, or other Birds, when they are but in their downe; Or of Whelps, cutting their Haire as short as may be; Or of some other Beast; with some oyntment, that is not hurtfull to the Flesh; And that will harden, and sticke very close; And see whether it will not alter the Colours of the Feathers, or Haire. It is receiued, that the Pulling off, the first Feathers of Birds, cleane, will make the new come forth white: And it is certaine, that White is a penurious Colour, & where Moisture is scant. So Blew Violets, & other Flowers, if they be starued, turne Pale and White; Birds, and Horses, by Age, or Scarres, turne white: And the Hoare Haires of Men, come by the same reason, And therefore in Birds, it is very likely, that the Feathers that come first, will be many times of diuers Colours, according to the Nature of the Bird; For that the Skin is more porous; But when the Skin is more shut, and close, the Feathers will come White. This is a good Experiment, not only for the Producing of Birds, and Beasts of strange Colours; but also, for the Disclosure of the Nature of Colours themselues; which of them require a finer Porositie, and which a grosser.

It is a worke of Prouidence, that hath beene truly obserued by some; That the Yolke of the Egge, conduceth little to the Generation of the Bird; But onely to the Nourishment of the same: For if a Chicken be opened, when it is new hatched; you shall finde much of the Yolke remaining. And it is needfull, that Birds, that are shaped without the Females Wombe; haue in the Egge, as well Matter of Nourishment, as Matter of generation for the Body. For after the Egge is laid, and seuered from the Body of the Hen; It hath no more Nourishment

from the Hen; But onely a quickening Heat when shee sitteth. But Beasts, and Men need not the matter of Nourishment within themselues; Because they are shaped within the Wombe of the Female, and are Nourished continually from her Body.

It is an Inueterate and receiued Opinion, that Cantharides applyed to any Part of the Body, touch the Bladder, and exulcerate it, if they stay on long. It is likewise Receiued, that a kinde of Stone, which they bring out of the West Indies, hath a peculiar force to moue Grauell, and to dissolue the Stone; In so much, as laid but to the wrest, it hath so forcibly sent downe Grauell, as Men haue beene glad to remoue it; It was so violent.

It is receiued and confirmed by daily Experience, that the Soales of the Feet haue great Affinity with the Head, and the Mouth of the Stomach: As we see, Going wet-shod, to those that vse it not, affecteth both: Applications of hot Powders to the Feet attenuate first, and after drie the Rheume: And therefore a Physitian, that would be Mysticall, prescribeth, for the Cure of the Rheume, that a Man should walke Continually vpon a Camomill Alley; Meaning, that he should put Camomill within his Sockes. Likewise Pigeons bleeding, applyed to the Soales of the Feet, ease the Head: And Soporiferous Medicines applied vnto them, prouoke Sleepe.

It seemeth, that as the Feet haue a Sympathy with the Head; So the Wrests and Hands, haue a Sympathy with the Heart; We see the Affects and Passions of the Heart, and Spirits, are notably disclosed by the Pulse: And it is often tried, that Iuyces of Stock-Gilly-Flowers, Rose-Campian, Garlicke, and other things; applied to the Wrests, and renewed; haue cured long Agues. And I conceiue, that washing with certaine Liquours, the Palmes of the Hands, doth much good: And they doe well in Heats of Agues, to hold in the Hands, Egges of Alablaster, and Balls of Crystall.

Of these things we shall speake more, when we handle the Title of Sympathy and Antipathy, in the proper Place.

The Knowledge of man (hitherto) hath beene determined by the View, or Sight; So that whatsoeuer is Inuisible, either in respect of the Finenesse of the

Body it selfe; Or the Smallnesse of the Parts; Or of the Subtilty of the Motion; is little inquired. And yet these be the Things that Gouerne Nature Principally; And without which, you cannot make any true Analysis and Indication of the Proceedings of Nature. The Spirits or Pneumaticals, that are in all Tangible Bodies, are searce knowne. Sometimes they take them for Vacuum; wheras they are the most Actiue of Bodies. Sometimes they take them for Aire; From which they differ exceedingly, as much as Wine from Water; And as Wood from Earth. Sometimes they will haue them to be Naturall Heat, or a Portion of the Element of Fire; Wheras some of them are crude, and cold. And Sometimes they will haue them to be the Vertues and Qualities of the Tangible Parts, which they see; whereas they are Things by themselues. And then, when they come to Plants and liuing Creatures, they call them Soules. And such Superficiall Speculations they haue; Like Prospectiues, that shew things inward, when they are but Paintings. Neither is this a Question of Words, but infinitely materiall in Nature. For Spirits are nothing else but a Naturall Body, rarified to a Proportion, & included in the Tangible Parts of Bodies, as in an Integument. And they be no lesse differing one from the other, than the Dense or Tangible Parts: And they are in all Tangible Bodies whatsoeuer, more or lesse: And they are neuer (almost) at rest: And from them, and their Motions, principally proceed Arefaction, Colliquation, Concoction, Maturation, Putrefaction, Viuification, and most of the Effects of Nature: For, as we haue figured them in our Sapientiâ Veterum, in the Fable of Proserpina, you shall in the Infernall Regiment heare little Doings of Pluto, but most of proserpina: For Tangible Parts in Bodies are Stupide things; And the Spirits doe (in effect) all. As for the differences of Tangible Parts in Bodies, the industry of the Chymists hath giuen some light, in discerning by their Separations, the Oily, Crude, Pure, Impure, Fine, grosse Parts of Bodies, and the like. And the Physitians are content to acknowledge, that Herbs, and Drugs haue diuers parts; As that Opiums hath a Stupefactiue Part, and a Heating Part; The one mouing Sleepe, the other a Sweat following; And that Rubarb hath Purging Parts, and Astringent Parts, &c. But this whole Inquisition is weakly and Negligently handled. And for the more subtill differences of the Minute Parts,

and the Posture of them in the Body, (which also hath great Effects) they are not at all touched: As for the Motions of the Minute Parts of Bodies, which doe so great Effects, they haue not beene obserued at all; because they are Inuisible, and incurre not to the Eye; but yet they are to be deprehended by Experience: As Democritus said well, when they charged him to hold, that the World was made of such little Moats, as were seene in the Sunne; Atomus (saith he) necessitate Rationis & Experientia esse connincitur; Atomum enim nemo vnquam vidit. And therefore the Tumult in the parts of Solide Bodies, when they are compressed, which is the Cause of all Flight of Bodies thorow the Aire, and of other Mechanicall Motions, (as hath beene partly touched before, and shall be throughly handled in due place,) is not seene at all. But neuerthelesse, if you know it not, or enquire it not attentiuely and diligently, you shall neuer be able to discerne, and much lesse to produce, a Number of Mechanicall Motions. Againe, as to the Motions Corporall, within the Enclosures of Bodies, wherby effects (which were mentioned before) passe betweene the Spirits, and the Tangible Parts; (which are, Arefaction, Colliquation, Concoction, Maturation, &c.) they are not at all handled. But they are put off by the Names of Vertues, and Natures, and Actions, and Passions, and such other Logicall Words.

It is certaine, that all Powers in Nature, Heat is the chiefe; both in the Frame of Nature, and in the workes of Art. Certaine it is likewise, that the Effects of Heat, are most aduanced, when it worketh vpon a Body, without losse or dissipation of the Matter; for that euer betrayeth the Account. And therefore it is true, that the power of Heat is best perceiued in Distillations, which are performed in close Vessels, and Receptacles. But yet there is a higher Degree; For howsoeuer Distillations doe keepe the Body in Cells, and Cloisters, without Going abroad; yet they giue space vnto Bodies to turne into Vapour; To returne into Liquour; And to Separate one part from another. So as Nature doth Expatiate, although it hath not full Liberty: wherby the true and Vltime Operations of Heat are not attained. But if Bodies may be altered by Heat, and yet no such Reciprocation of Rarefaction, and of Condensation, and of Separation, admitted; then it is like that this Proteus of Matter, being held by the

Sleeues, will turne and change into many Metaworphoses. Take therefore a Square Vessell of Iron, in forme of a Cube, and let it haue good thicke and strong Sides. Put into it a Cube of Wood, that may fill it as close as may be; And let it haue a Couer of Iron, as strong (at least) as the Sides; And let it be well Luted, after the manner of the Chymists. Then place the Vessell within burning Coales, kept quicke kindled, for some few houres space. Then take the Vessell from the Fire, and take off the Couer, and see what is become of the Wood. I conceiue that since all Inflammation, and Euaporation are vtterly prohibited, and the Body still turned vpon it Selfe, that one of these two Effects will follow: Either that the Body of the Wood will be turned into a kinde of Amalgama, (as the Chymists call it;) Or that the Finer Part will bee turned into Aire, and the Grosser sticke as it were baked, and incrustate vpon the Sides of the Vessell; being become of a Denser Matter, than the Wood it selfe, Crude. And for another Triall, take also Water, and put it in the like Vessell, stopped as before; But vse a gentler Heat, and remoue the vessell sometimes from the Fire; And againe, after some small time, when it is Cold, renue the Heating of it: And repeat this Aloeration some few times: And if you can once bring to passe, that the Water, which is one of the Simplest of Bodies, be changed in Colour, Odour, or Taste, after the manner of Compound Bodies, you may be sure that there is a great Worke wrought in Nature, and a Notable Entrance made into strange Changes of Bodies, and productions: And also a Way made, to doe that by Fire, in small time, which the Sunne and Age do in long time. But of the Admirable Effects of this Distillation in Close, (for so we will call it) which is like the Wombes and Matrices of liuing creatures, where nothing Expireth, nor Separateth; We will speake fully, in the due place; Not that we Aime at the making of Paracelsus Pigmey's; Or any such Prodigious Follies; But that we know the Effects of Heat will be such, as will scarce fall vnder the Conceit of Man; If the force of it be altogether kept in.

There is nothing more Certaine in Nature, than that it is impossible for any Body, to be vtterly Annibilated; But that, as it was the worke of the Omnipotency of God, to make Somewhat of Nothing; So it requireth the like

Omnipotency, to turne Somewhat into Nothing. And therefore it is well said, by an Obscure Writer of the Sect of the Chymists; That there is no such way to effect the Strange Transmutations of Bodies, as to endeuour and vrge by all meanes, the Reducing of them to Nothing. And herein is contained also a great Secret of Preseruation of Bodies from Change; For if you can prohibit, that they neither turne into Aire, because no Aire commeth to them; Not goe into the Bodies Adiacent, because they are vtterly Heterogeneall; Nor make a Round and Circulation within themselues; they will neuer change, though they be in their Nature neuer so Perishable, or Mutable. We see, how Flies, and Spiders, and the like, get a Sepulcher in Amber, more Durable, than the Monument, and Embalming of the Body of any King. And I conceiue the like will be of Bodies put into Quick-siluer. But then they must be but thinne; As a leafe, or a peece of Paper, or Parchment; For if they haue a greater Crassitude, they will alter in their owne Body, though they spend not. But of this, We shall speake more, when we handle the Title of Conseruation of Bodies.

II. Century.

MVSICKE in the Practise, hath bin well pursued; And in good Variety; But in the Theory, and especially in the Yeelding of the Causes of the Practique, very weakly; Being reduced into certaine Mysticall Subtilties, of no vse, and not much Truth. We shall therefore, after our manner, ioyne the Contemplatiue and Actiue Part together.

All Sounds, are either Musicall Sounds, which we call Tones; Wherunto there may be an Harmony; which Sounds are euer Equall; As Singing, the Sounds of Stringed, and Wind-Instruments, the Ringing of Bells, &c. Or Immusicall Sounds; which are euer Vnequall; Such as are the Voice in Speaking, all Whisperings, all Voices of Beasts, and Birds, (except they bee Singing Birds;) all Percussions, of Stones, Wood, Parchment, Skins (as in Drummes;) and infinite others.

The Sounds that produce Tones, are euer from such Bodies, as are in their Parts and Pores Equall; As well as the Sounds themselues are Equall; And such are the Percussions of Metall, as in Bells; Of Glasse, as in the Fillipping of a Drinking Glasse; Of Aire, as in Mens voices whilest they Sing, in Pipes, Whistles, Organs, Stringed Instruments, &c. And of Water; as in the Nightingale-Pipes of Regalls, or Organs, and other Hydranlickes; which the Ancients had, and Nere did so much esteeme, but are now lost. And if any Man thinke, that the String of the Bowe, and the String of the Viall, are neither of them Equall Bodies; And yet produce Tones; he is in an errour. For the Sound is not created between the Bowe or Plectrum, and the String; But between the String and the Aire; No more then it is between the Finger or Quill, and the String, in other Instruments. So there are (in effect) but three Percussions that create Tones; Percussions of Metalls, (comprehending Glasse, and the like;) Percussions of Aire; and Percussions of Water.

The Diapason or Eight in Musicke is the sweetest Concord; Insomuch, as it is in effect an Vnison; As we see in Lutes, that are strung in the Base Strings with

two strings, one an Eight aboue another; Which make but as one Sound. And euery Eighth Note in Ascent, (as from Eight to Fifteene: from Fifteene to twenty two, and so in infinitum,) are but Scales of Diapason. The Cause is darke, and hath not beene rendred by any; And therfore would be better contemplated. It seemeth that Aire, (which is the Subiect of Sounds) in Sounds that are not Tones, (which are all vnequall, as hath beene said) admitteth much Varietie; As wee see in the Voices of Liuing Creatures; And likewise in the Voices of seuerall Men; (for we are capable to discerne seuerall Men by their Voices;) And in the Coniugation of Letters, whence Articulate Sounds proceed; Which of all others are most various. But in the Sounds which we call Tones, (that are euer Equall) the Aire is not able to cast it selfe into any such varietie; But is forced to recurre into one and the same Posture or Figure, onely differing in Greatnesse and Smalnesse. So we see Figures may be made of lines, Crooked and Straight, in infinite Varietie, where there is Inequalitie; But Circles, or Squares, or Triangles Equilaterall, (which are all Figures, of Equall lines) can differ but in Greater, or Lesser.

It is to be noted (the rather left any Man should thinke, that there is any thing in this Number of Eight, to create the Diapason), that this Computation of Eight, is a thing rather receiued, than any true Computation. For a true Computation ought euer to bee, by Distribution into equall Portions. Now there be interuenient in the Rise of Eight (in Tones) two Beemolls, or Halfe-notes; So as if you diuide the Tones equally, the Eight is but Seuen whole and equall Notes; And if you subdiuide that into Halfe Notes, (as it is in the Stops of a Lute), it maketh the Number of thirteene.

Yet this true; That in the ordinary Rises and Falles of the Voice of Man, (not measuring the Tone by whole Notes, and halfe Notes, which is the Equall Measure;) there fall out to be two Beemols (as hath beene said) betweene the Vnison and the Diapason: And this Varying is naturall. For if a Man would endeuour to raise or fall his Voice, still by HalfeNotes, like the Stops of a Lute; or by whole Notes alone, without Halfes; as farre as an Eight; he will not be able

to frame his Voice vnto it. Which sheweth, that after euery three whole Notes Nature requireth, for all Harmonicall vse, one halfe Note to be interposed.

It is to be considered, that whatsoeuer Vertue is in Numbers, for Conducing to Concent of Notes, is rather to bee ascribed to the Ante-Number, than to the Entire Number; As namely, that the Sound retarneth after Six, or after Twelue; So that the Seuenth, or the Thirteenth, is not the Matter, but the Sixth, or the Twelfth; And the Seuenth and the Thirteenth are but the limits and Boundaries of the returne.

The Concords in Musick which are Perfect, or Semiperfect, betweene the Vnison, and the Diapason, are the Fifth, which is the most Perfect; the Third next; And the Sixth which is more harsh: And as the Ancients esteemed, and so doe my selfe and some Other yet, the Fourth which they call Diatessaron. As for the Tenth, Twelfth, Thirteenth, and so in infinitum; they be but Recurrences of the Former; *viz.* of the Third, the Fifth, and the Sixth; being an Eight respectiuely from them.

For Discords, the Second, and the Seuenth, are of all others the most odious, in Harmony, to the Sense; whereof the One is next aboue the Vnison, the Other next vnder the Diapason: which may shew, that Harmony requireth a competent distance of Notes.

In Harmony, if there be not a Discord to the Base, it doth not disturbe the Harmony, though there be a Discord to the Higher Parts; So the Discord be not of the Two that are Odious; And therfore the ordinary Concent of Foure Parts consisteth of an Eight, a Fifth, and a Third to the Base: But that Fifth is a Fourth to the Treble, and the Third is a Sixth. And the Cause is, for that the Base striking more Aire, doth ouercome and drowne the Treble. (vnlesse the Discord be very Odious;) And so hideth a small Imperfection. For we see, that in one of the lower Strings of a Lute, there soundeth not the Sound of the Treble, not any Mixt Sound, but onely the Sound of the Base.

We haue no Musicke of Quarter-Notes; And it may be, they are not capable of Harmony; For we see the HalfeNotes themselues doe but interpose sometimes. Neuerthelesse we haue some Slides, or Relishes, of the Voice, or

Strings, as it were continued without Notes, from one Tone to another, rising or falling, which are delightfull.

The Causes of that which is Pleasing, or Ingrate to the Hearing, may receiue light by that, which is Pleasing or Ingrate to the Sight. There be two Things Pleasing to the Sight, (leauing Pictures, and Shapes aside, which are but Secondary Obiects; And please or displease but in Memory;) these two are, Colours, and Order. The Pleasing of Colour symbolizeth with the Pleasing of any Single Tone to the Eare; But the Pleasing of Order doth symbolize with Harmony. And therfore we see in Garden-knots, and the Frets of Houses, and all equall and well-answering Figures, (as Globes, Pyramides, Cones, Cylinders, &c.) how they please; whereas Vnequall Figures are but Deformities. And both these Pleasures, that of the Eye, and that of the Eare, are but the Effects of Equality; Good Proportion, or Correspondence: So that (out of Question,) Equality, and Correspondence, are the Causes of Harmony. But to finde the Proportion of that Correspondence, is more abstruse; wherof notwithstanding we shall speake somewhat, (when we handle Tones,) in the generall Enquiry of Sounds.

Tones are not so apt altogether to procure Sleep, as some other Sounds; As the Wind, the Purling of Water, Humming of Bees, a Sweet Voice of one that readeth, &c. The Cause whereof is, for that Tones, because they are Equall, and slide not, doe more strike and erect the Sense, than the other. And Ouermuch Attention hindreth Sleepe.

There be in Musick certaine Figures, or Tropes; almost agreeing with the Figures of Rhetoricke; And with the Affections of the Minde, and other Senses. First, the Diuision and Quauering, which please so much in Musick, haue an Agreement with the Glittering of Light; As the MooneBeames playing vpon a Waue. Againe, the Falling from a Discord to a Concord, which maketh great Sweetnesse in Musick, hath an Agreement with the Affections, which are reintegrated to the better, after some dislikes: It agreeth also with the Taste, which is soone glutted with that which is sweet alone. The Sliding from the Close or Cadence, hath an Agreement with the Figure in Rhetoricke, which they

call Praeter Expectatum; For there is a Pleasure euen in Being deceined. The Reports, and Fuges, haue an Agreement with the Figures in Rhetorick, of Repetition, and Traduction. The Tripla's, and Changing of Times, haue an Agreement with the Changes of Motions; As when Galliard Time, and Measure Time, are in the Medley of one Dance.

It hath been anciently held, and obserued, that the Sense of Hearing, and the Kinds of Musick, haue most Operation vpon Manners; As to Incourage Men, and make them warlike; To make them Soft and Effeminate; To make them Graue; To make them Light; To make them Gentle and inclined to Pitty, &c. The Cause is, for that the Sense of Hearing striketh the Spirits more immediatly, than the other Senses; And more incorporeally than the Smelling: For the Sight, Taste, and Feeling, haue their Organs, not of so present and immediate Accesse to the Spirits, as the Hearing hath. And as for the Smelling, (which indeed worketh also immediatly vpon the Spirits, and is sorcible while the Obiect remaineth,) it is with a Communication of the Breath, or Vapour of the Obiect Odorate: But Harmony entring easily, and Mingling not at all, and Comming with a manifest Motion; doth by Custome of often Affecting the Spirits, and Putting them into one kinde of Posture, alter not a little the Nature of the Spirits, euen when the Obiect is remoued. And therefore we see, that Tunes and Aires, euen in their owne Nature, haue in themselues some Affinity with the Affections; As there be Merry Tunes, Dolefull Tunes, Solemne Tunes; Tunes inclining Mens mindes to Pitty; Warlike Tunes; &c. So as it is no Maruell, if they alter the Spirits; considering that Tunes haue a Predisposition to the Motion of the Spirits in themselues. But yet it hath been noted, that though this variety of Tunes, doth dispose the Spirits to variety of Passions, conforme vnto them; yet generally, Musick feedeth that disposition of the Spirits which it findeth. We see also that seuerall Aires, and Tunes, doe please seuerall Nations, and Persons, according to the Sympathy they haue with their Spirits.

Perspectiue hath been with some diligence inquired; And so hath the Nature of Sounds, in some sort, as far as concerneth Musick. But the Nature of Sounds in generall, hath been superficially obserued. It is one of the subrillest Peeces of

Nature. And besides, I practise, as I doe aduise; which is, after long Inquiry of Things, Immerse in Matter, to interpose some Subiect, which is Immateriate, or lesse Materiate; Such as this of Sounds; To the end, that the Intellect may be Rectified, and become not Partiall.

It is first to be considered, what Great Motions there are in Natute, which passe without Sound, or Noise. The Heauens turne about, in a most rapide Motion, without Noise to vs perceiued; Though in some Dreames they haue been said to make an excellent Musick. So the Motions of the Comets, and Fiery Meteors (as Stella Cadens, &c.) yeeld no Noise. And if it be thought, that it is the Greatnesse of distance from vs, whereby the Sound cannot be heard; We see that Lightnings, and Coruscations, which are neere at hand, yeeld no Sound neither. And yet in all these, there is a Percussion and Diuision of the Aire. The Windes in the Vpper Region (which moue the Clouds aboue (which we call the Racke) and are not perceiued below) passe without Noise. The lower Windes in a Plaine, except they be strong, make no Noise; But amongst Trees, the Noise, of such Windes will be perceiued. And the Windes (generally) when they make a Noise, doe euer make it vnequally, Rising and Falling, and sometimes (when they are vehement,) Trembling at the Height of their Blast. Raine, or Haile falling, (though vehemently,) yeeldeth no Noise, in passing through the Aire, till it fall vpon the Ground, Water, Houses, or the like. Water in a Riuer (though a swift Streame) is not heard in the Channell, but runneth in Silence, if it be of any depth; But the very Streame vpon Shallowes, of Grauell, or Pebble, will be heard. And Waters, when they beat vpon the Shore, or are straitned, (as in the falls of Bridges;) Or are dashed against themselues, by Windes, giue a Roaring Noise. Any peece of Timber, or Hard Body, being thrust forwards by another Body Contiguous, without knocking, giueth no Noise. And so Bodies in weighing, one vpon another, though the Vpper Body presse the lower Body downe, make no Noise. So the Motion in the Minute Parts of any solide Body, (which is the Principall Cause of Violent Motion, though vnobserued;) passeth without Sound; For that Sound, that is heard sometimes, is produced onely by the Breaking of the Aire; And not by the Impulsion of the Parts. So it is

manifest; That where the Anteriour Body giueth way, as fast as the Posteriour commeth on, it maketh no Noise; be the Motion neuer so great, or swift.

Aire open, and at large, maketh no Noise, except it be sharply percussed; As in the Sound of a String, where Aire is percussed by a hard, and stiffe Body; And with a sharp loose; For if the String be not strained, it maketh no Noise. But where the Aire is pent, and straitned, there Breath, or other Blowing, (which carry but a gentle Percussion,) suffice to create Sound; As in Pipes, and windeInstruments. But then you must note, that in Recorders, which goe with a gentle Breath, the Concaue of the Pipe, were it not for the Fipple, that straitneth the Aire, (much more than the Simple Concaue;) would yeeld no Sound. For as for other windeInstruments, they require a forcible Breath; As Trumpets, Cornets, Hunters-hornes, &c. Which appeareth by the blowne-cheeks of him that windeth them. Organs also are blowne with a strong winde, by the Bellowes. And note againe, that some kinde of windeInstruments, are blowne at a small Hole in the side, which straitneth the Breath at the first Entrance; The rather, in respect of their Trauerse, and Stop aboue the Hole, which performeth the Fipples Part; As it is seene in Flutes, and Fifes, which will not giue Sound, by a Blast at the end, as Recorders, &c. doe. Likewise in all Whistling, you contract the Mouth; And to make it more sharp, Men sometimes vse their Finger. But in Open Aire, if you throw a Stone, or a Dart, they giue no Sound: No more doe Bullets, except they happen to be a little hollowed in the Casting; Which Hollownesse penneth the Aire: Not yet Arrowes, except they be ruffled in their Feathers, which likewise penneth the Aire. As for Small whistles, or Shepheards Oa — Pipes; they giue a Sound, because of their extreame Slendernesse, whereby the Aire is more pent, than in a Wider Pipe. Againe, the Voices of Men, and Liuing Creatures, passe through the throat, which penneth the Breath. As for the Iewes Harpe, it is a sharp Percussion; And besides, hath the vantage of penning the Aire in the Mouth.

Solide Bodies, if they be very softly percussed, giue no Sound; As when a man treadeth very softly vpon Boards. So Chests or Doores in faire weather,

when they open easily, giue no Sound. And Cart-wheeles squeak not, when they are liquoured.

The Flame of Tapers, or Candles, though it be a swift Motion, and breaketh the Aire, yet passeth without Sound. Aire in Ouens, though (no doubt) it doth (as it were) boyle, and dilate it selfe, and is repercussed; yet it is without Noise.

Flame percussed by Aire, giueth a Noise; As in Blowing of the Fire by Bellowes; Greater, than if the Bellowes should blow vpon the Aire it selfe. And so likewise Flame percussing the Aire strongly, (as when Flame suddenly taketh, and openeth,) giueth a Noise; So, Great Flames, whiles the one impelleth the other, giue a bellowing Sound.

There is a Conceit runneth abroad, that there should be a white Powder, which will discharge a Peece without Noise; which is a dangerous Experiment, if it should be true: For it may cause secret Murthers. But it seemeth to me vnpossible; For, if the Aire pent, be driuen forth, and strike the Aire open, it will certainly make a Noise. As for the white Powder (if any such thing be, that may extinguish, or dead the Noise,) it is like to be a Mixture of Petre, and Sulphur, without Coale. For Petre alone will not take Fire. And if any Man thinke, that the Sound may be extinguished, or deaded, by discharging the Pent Aire, before it commeth to the Mouth of the Peece, and to the Open Aire; That is not probable; For it will make more diuided Sounds; As if you should make a Crosse Barrell hollow, thorow the Barrell of a Peece, it may be, it would giue seuerall Sounds, both at the Nose, and at the Sides. But I conceiue, that if it were possible, to bring to passe, that there should be no Aire pent at the Mouth of the Peece, the Bullet might fly with small, or no Noise, For first it is certaine, there is no Noise in the Percussion of the Flame vpon the Bullet. Next the Bullet, in piercing thorow the Aire, maketh no Noise; As hath beene said. And then, if there be no Pent Aire that striketh vpon Open Aire, there is no Cause of Noise; And yet the Flying of the Bullet will not be stayed. For that Motion (as hath beene oft said) is in the Parts of the Bullet, and not in the Aire. So as triall must be made by taking some small Concaue of Metall, no more than you mean to fill with Powder; And laying the Bullet in the Mouth of it, halfe out into the Open Aire.

I heard it affirmed by a Man, that was a great Dealer in Secrets, but he was but vaine; That there was a Conspiracy (which himselfe hindred,) to haue killed Queene Mary, Sister to Queene Elizabeth, by BurningGlasse, when shee walked in Saint Iames Parke, from the Leads of the House. But thus much (no doubt) is true; That if BurningGlasses could be brought to a great strength, (as they talke generally of BurningGlasses, that are able to burne a Nauy,) the Percussion of the Aire alone, by such a BurningGlasse, would make no Noise; No more than is found in Cornscations, and Lightnings, without Thunders.

I suppose, that Impression of the Aire with Sounds, asketh a time to be conueighed to the Sense; As well as the Impression of Species visible: Or else they will not be heard. And therefore, as the Bullet moueth so swift, that it is Inuisible; So the same Swiftnesse of Motion maketh it Inaudible: For we see, that the Apprehension of the Eye, is quicker than that of the Eare.

All Eruptions of Aire, though small and slight, giue an Entity of Sound; which we call Crackling, Pussing, Spitting, &c. As in Bay-salt, and Bayleaues, cast into the Fire; So in Chesnuts, when they leape forth of the Ashes; So in Greene Wood laid vpon the Fire, especially Roots; So in Candles that spit Flame, if they be wet; So in Rasping, Sneezing, &c. So in a Rose-leafe gathered together into the fashion of a Purse, and broken vpon the Fore-head, or Backe of the Hand, as Children vse.

The Cause giuen of Sound, that it should be an Elision of the Aire (wherby, if they meane any thing, they meane a Cutting, or Diuiding, or else an Attenuating of the Aire) is but a Terme of Ignorance: And the Motion is but a Catch of the Wit vpon a few Instances; As the Manner is in the Philosophy Receiued. And it is common with Men, that if they haue gotten a Pretty Expression, by a Word of Art, that Expression, goeth currant; though it be empty of Matter. This Conceit of Elision, appeareth most manifestly to befalse, in that the Sound of a Bell, String, or the like, continueth melting, some time, after the Percussion; But ceaseth straight-waies, if the Bell, or String, be touched and stayed: wheras, if it were the Elision of the Aire, that made the Sound, it could not be, that the Touch of the Bell, or String, should extinguish so suddenly that Motion, caused by the

Elision of the Aire. This appeareth yet more manifestly, by Chiming with a Hammer, vpon the Outside of a Bell; For the Sound will be according to the inward Concaue of the Bell; whereas the Elision, or Attenuation of the Aire, cannot be but onely betweene the Hammer, and the Outside of the Bell, So againe, if it were an Elision, a broad Hammer, and a Bodkin, strucke vpon Metall, would giue a diuers Tone; As well as a diuers Loudnesse: But they doe not so; For though the Sound of the one be Louder, and of the other Softer, yet the Tone is the same. Besides, in Eccho's, (wherof some are as loud as the Originall Voice, there is no new Elision; but a Repercussion onely. But that which conuinceth it most of all, is, that Sounds are generated, where there is no Aire at all. But these and the like Conceits, when Men haue cleared their vnderstanding, by the light of Experience, will scatter, and breake vp like a Mist.

It is certaine, that Sound is not produced at the first, but with some Locall Motion of the Aire, or Flame, or some other Medium; Nor yet without some Resistance, either in the Aire, or the Body Percussed. For if there be a meere Yeelding, or Cession, it produceth no Sound; As hath beene said. And therin Sounds differ from Light, and Colours; which passe thorow the Aire, or other Bodies, without any Locall Motion of the Aire; either at the first, or after. But you must attentiuely distinguish, betweene the Locall Motion of the Aire, (which is but Vehiculum Caussae, A Carrier of the Sounds,) and the Sounds themselues, Conueighed in the Aire. For as to the former, we see manifestly, that no Sound is produced (no not by Aire it selfe against other Aire, as in Organs, &c.) but with a perceptible Blast of the Aire; And with some Resistance of the Aire strucken. For euen all Speech, (which is one of the gentlest Motions of Aire,) is with Expulsion of a little Breath. And all Pipes haue a Blast, as well as a Sound. We see also manifestly, that Sounds are carried with Wind: And therefore Sounds will be heard further with the Wind, than against the Wind; And likewise doe rise and fall with the Intension or Remission of the Wind. But for the Impression of the Sound, it is quite another Thing; And is vtterly without any Locall Motion of the Aire, Perceptible; And in that resembleth the Species visible: For after a Man hath lured, or a Bell is rung, we cannot discerne any Perceptible Motion (at

all) in the Aire, a long as the Sound goeth; but only at the first. Neither doth the Wind (as far as it carrieth a Voice,) with the Motion therof, confound any of the Delicate, and Articulate Figurations of the Aire, in Variety of Words. And if a Man speake a good loudnesse, against the Flame of a Candle, it will not make it tremble much; though most, when those Letters are pronounced, which contract the Mouth; As F, S,V, and some others. But Gentle Breathing, or Blowing without speaking, will moue the Candle far more. And it is the more probable, that Sound is without any Locall Motion of the Aire, because as it differeth from the Sight, in that it needeth a Locall Motion of the Aire at first; So it paralleleth in so many other things with the Sight, and Radiation of Things visible; Which (without all question) induce no Locall Motion in the Aire, as hath beene said.

Neuerthelesse it is true, that vpon the Noise of Thunder, and great Ordnance; Glasse windowes will shake; and Fishes are thought to be frayed with the Motion, caused by Noise vpon the water. But these Effects are from the Locall Motion of the Aire, which is a Concomitant of the Sound, (as hath beene said;) and not from the Sound.

It hath beene anciently reported, and is still receiued, that Extreme Applanses, and Shouting of People assembled in great Multitudes, haue so rarified, and broken the Aire, that Birds flying ouer, haue fallen downe, the Aire being not able to support them. And it is beleeued by some, that Great Ringing of Bells in populous Cities, hath chased away Thunder: and also dissipated Pestilent Aire: All which may be also from the Concussion of the Aire, and not from the Sound.

A very great Sound, neare hand, hath strucken many Dease; And at the Instant they haue found, as it were, the breaking of a Skin or Parchment in their Eare: And my Selfe standing neare one that Lured loud, and shrill, had suddenly an Offence, as if somewhat had broken, or beene dislocated in my Eare; And immediately after, a loud Ringing; (Not an ordinary Singing, or Hissing, but far louder, and differing;) so as I feared some Deafenesse. But after some halfe Quarter of an Houre it vanished. This Effect may be truly referred vnto the Sound: For (as is commonly receiued) an ouer-potent Obiect doth destroy the

Sense; And Spirituall Species, (both Visible, and Audible,) will worke vpon the Sensories, though they moue not any other Body.

In Delation of Sounds, the Enclosure of them preserueth them, and causeth them to be heard further. And wee finde in Roules of Parchment, or Trunckes, the Mouth being laid to the one end of the Rowle of Parchment, or Truncke, and the Eare to the other, the Sound is heard much further, than in the Open Aire; The Cause is, for that the Sound spendeth, and is dissipated in the Open Aire; But in such Concaues it is conserued, and contracted. So also in a Peece of Ordnance, if you speak in the Touch-hole, and another lay his Eare to the Mouth of the Peece, the Sound passeth, and is farre better heard, than in the Open Aire.

It is further to be considered, how it proueth and worketh, when the Sound is not enclosed all the Length of his Way, but passeth partly through open Aire; As where you speake some distance from a Truncke; or where the Eare is some distance from the Truncke; at the other End; Or where both Mouth and Eare are distant from the Truncke. And it is tried, that in a long Truncke, of some eight or ten foot, the Sound is holpen, though both the Mouth, and the Eare be a handfull, or more, from the Ends of the Truncke; And somewhat more holpen, when the Eare of the Hearer is neare, than when the Mouth of the Speaker. And it is certaine, that the Voice is better heard in a Chamber from abroad, than abroad from within the Chamber.

As the Enclosure, that is Round about and Entire, preserueth the Sound; So doth a Semi-Concaue, though in a lesse degree. And therefore, if you diuide a Truncke, or a Cane into two, and one speake at the one end, and you lay your Eare at the other, it will carry the Voice further, than in the Aire at large. Nay further, if it be not a full Semi-Concaue; but if you doe the like vpon the Mast of a Ship, or a long Pole, or a Peece of Ordnance (though one speake vpon the Surface of the Ordnance, and not at any of the Bores;) the Voice will be heard further, than in the Aire at large.

It would be tried, how, and with what proportion of disaduantage, the Voice will be carried in an Horne, which is a line Arched; Or in a Trumpet, which is a line Retorted; Or in some Pipe that were Sinuous.

It is certaine, (howsoeuer it crosse the Receiued Opinion) that Sounds may be created without Aire, though Aire be the most fauourable Deferent of Sounds. Take a Vessell of Water, and knap a paire of Tongs some depth within the Water, and you shall heare the Sound of the Tongs well, and not much diminished; And yet there is no Aire at all present.

Take one Vessell of Siluer, and another of Wood, and fill each of them full of Water, and then knap the Tongs together, as before, about an handfull from the Bottome, and you shall finde the Sound much more Resounding from the Vessell of Siluer, than from that of Wood; And yet if there be not water in the Vessell, so that yo knap the Tongs in the Aire, you shall finde no difference, betweene the Siluer and Woodden Vessell. Whereby, beside the maine point of creating Sound without Aire, you may collect two Things: The one, that the Sound communicateth with the Bottome of the Vessell: The other, that such a Communication passeth farre better, thorow Water, than Aire.

Strike any Hard Bodies together, in the Middest of a Flame, and you shall heare the Sound, with little difference, from the Sound in the Aire.

The Pneumaticall Part, which is in all Tangible Bodies, and hath some Affinity with the Aire, performeth, in some degree, the Parts of the Aire; As when you knocke vpon an Emptie Barrell, the Sound is (in part) created by the Aire on the Outside; And (in part) by the Aire in the Inside; For the Sound will be greater or lesser, as the Barrell is more Emptie, or more full; But yet the Sound participateth also with the Spirit in the Wood, thorow which it passeth, from the Outside to the Inside: And so it commeth to passe, in the Chiming of Bells, on the Outside; where also the Sound passeth to the Inside: And a number of other like Instances, whereof we shall speake more, when we handle the Communication of Sounds.

It were extreame Grossenesse to thinke, (as wee haue partly touched before,) that the Sound in Strings is made, or produced, betweene the Hand and the String, or the Quill and the String, or the Bow and the String: For those are but Vehicula Motûs, Passages to the Creation of the Sound; the Sound being produced betweene the String and the Aire; And that not by any Impulsion of the

Aire from the first Motion of the String; but by the Returne or Result of the String, which was strained by the Touch, to his former Place: which Motion of Result is quicke and sharpe; Wheras the first Motion, is soft and dull. So the Bow tortureth the String continually, and thereby holdeth it in a Continuall Trepidation.

Take a Truncke, and let one whistle at the one End, and bold your Eare at the other, and you shall finde the Sound strike so sharpe, as you can scarce endure it. The Cause is, for that Sound diffuseth it selfe in round; And so spendeth it Selfe; But if the Sound, which would scatter in Open Aire, be made to goe all into a Canale; It must needs giue greater force to the Sound. And so you may note, that Enclosures doe not onely preserue Sound, but also Encrease and Sharpen it.

A Hunters Horne, being greater at one end, than at the other, doth encrease the Sound more, than if the Horne were all of an equall Bore. The Cause is, for that the Aire, and Sound, being first contracted at the leffer End, and afterwards hauing more Roome to spread at the greater End; doe dilate themselues; And in Comming out strike more Aire; whereby the Sound is the Greater, and Baser. And euen Hunters Hornes, which are sometimes made straight, and not Oblique, are euer greater at the lower end. It would be tried also in Pipes, being made far larger at the lower End: Or being made with a Belly towards the lower End, And then issuing into a straight Concaue againe.

There is in Saint Iames Fields, a Conduit of Bricke, vnto which ioyneth a low Vault; And at the End of that, a Round House of Stone: And in the Bricke Conduit there is a Window; And in the Round House a Slit or Rift of some little breadth: If you crie out in the Rift, it will make a fearfull Roaring at the Window. The Cause is the same with the former; For that all Concaues, that proceed from more Narrow to more Broad, doe amplifie the Sound at the Comming out.

Hawkes Bells, that haue Holes in the sides, giue a greater Ring, than if the Pellet did strike vpon Brasse, in the Open Aire. The Cause is the same with the first Instance of the Trancke; Namely, for that the Sound Enclosed with the Sides of the Bell, commeth forth at the Holes vnspent, and more strong.

In Drums, the Closenesse round about, that preserueth the Sound from dispersing, maketh the Noise come forth at the Drum-Hole, farre more loud, and strong, than if you should strike vpon the like Skin, extended in the Open Aire. The Cause is the same with the two precedent.

Sounds are better heard, and further off, in an Euening, or in the Night, than at the Noone, or in the Day. The Cause is, for that in the Day, when the Aire is more Thin, (no doubt) the Sound pierceth better; But when the Aire is more Thicke, (as in the Night) the Sound spendeth and spreadeth abroad lesse: And so it is a Degree of Enclosure. As for the Night, it is true also, that the Generall Silence helpeth.

There be two Kinds of Reflexions of Sounds; The one at Distance, which is the Eccho; Wherein the Originall is heard distinctly, and the Reflexion also distinctly; Of which we shall speake hereafter: The other in Concurrence; When the Sound Reflecting (the Reflexion being neare at hand) returneth immediatly vpon the Originall, and so iterateth it not, but amplifieth it. Therefore we see, that Musicke vpon the water soundeth more; And so likewise Musicke is better in Chambers Wainscotted, than Hanged.

The Strings of a Lute, or Violl, or Virginalls, doe giue a far greater Sound, by reason of the Knot, and Board, and Concaue vnderneath, than if there were nothing but onely the Flat of a Board, without that Hollow and Knot, to let in the Vpper Aire into the Lower. The Cause is, the Communication of the Vpper Aire with the Lower; And Penning of both from Expence, or Dispersing.

An Irish Harpe hath Open Aire on both sides of the Strings: And it hath the Concaue or Belly, not along the Strings, but at the End of the Strings. It maketh a more Resounding Sound, than a Bandora, Orpharion, or Citterne, which haue likewise Wire-strings. I iudge the Cause to be, for that Open Aire on both Sides helpeth, so that there be a Concaue; Which is therefore best placed at the End.

In a Virginall, when the Lid is downe, it maketh a more exile Sound, than when the Lid is open. The Cause is, for that all Shutting in of Aire, where there is no competent Vent, dampeth the Sound. Which maintaineth likewise the former Instance; For the Belly of the Lute, or Vi-ll, doth pen the Aire somewhat.

There is a Church at Glocester, (and as I haue heard the like is in some other places;) where if you speake against a Wall, softly, another shall heare your Voice better a good way off, than neare hand. Enquire more particularly of the Frame of that Place. I suppose there is some Vault, or Hollow, or Isle, behinde the Wall, and some Passage to it towards the further end of that Wall, against which you speake; So as the Voice, of him that speaketh, slideth along the Wall, and then entreth at some Passage, and communicateth with the Aire of the Hollow; For it is preserued somewhat by the plaine wall; but that is too weake to giue a Sound Audible, till it hath communicated with the backe Aire.

Strike vpon a Bowstring, and lay the Horne of the Bow neare your Eare, and it will encrease the Sound, and make a degree of a Tone. The Cause is, for that the Sensory, by reason of the Close Holding, is percussed before the Aire disperseth. The like is, if yo hold the Horne betwixt your Teeth. But that is a plaine Delation of the Sound; from the Teeth, to the Instrument of Hearing; For there is a great Entercourse betweene those two Parts; As appeareth by this; That a Harsh Grating Tune setteth the Teeth on edge. The like falleth out, if the Horne of the Bow be put vpon the Temples; But that is but the Slide of the Sound from thence to the Eare.

If you take a Rod of Iron, or Brasse, and hold the one end to your Eare, and strike vpon the other, it maketh a fat greater Sound, than the like Stroke vpon the Rod, not so made Contiguous to the Eare. By which, and by some other Instances, that haue beene partly touched, it should appeare; That Sounds doe not onely slide vpon the Surface of a Smooth Body, but doe also communicate with the Spirits, that are in the Pores of the Body.

I remember in Trinity Colledge in Cambridge, there was an Vpper Chamber, which being thought weake in the Roofe of it, was supported by a Pillar of Iron, of the bignesse of ones Arme, in the middest of the Chamber; Which if you had strucke, it would make a little flat Noise in the Roome where it was strucke; But it would make a great Bombe in the Chamber beneath.

The Sound which is made by Buckets in a Well, when they touch vpon the Water; Or when they strike vpon the side of the Well; Or when two Buckets

dash the one against the other; These Sounds are deeper, and suller, than if the like Percussion were made in the Open Aire. The Cause is, the Penning and Enclosure of the Aire, in the Concaue of the Well.

Barrells placed in a Roome vnder the Floare of a Chamber, make all Noises in the same Chamber, more Full and Resounding.

So that there be fine wayes (in generall,) of Maioration of Sounds: Enclosure Simple; Enclosure with Dilatation; Communication; Reflexion Concurrent; and Approach to the Sensory.

For Exility of the Voice, or other Sounds: It is certaine, that the Voice doth passe thorow Solide and Hard Bodies, if they be not too thick. And thorow Water; which is likewise a very Close Body, and such an one, as letteth not in Aire. But then the Voice, or other Sound, is reduced, by such passage, to a great Weaknesse, or Exility. If therefore you stop the Holes of a Howkes Bell, it will make no Ring, but a flat Noise, or Rattle. And so doth the Aëtites, or Eagles Stone, which hath a little Stone within it.

And as for Water, it is a certaine Triall: Let a Man goe into a Bath, and take a Paile, and turne the Bottome vpward, and carry the Mouth of it, (Euen,) downe to the Leuell of the Water; and so presse it downe vnder the Water, some handfull and an halfe, still keeping it euen, that it may not tilt on either side, & so the Aire get out: Then let him that is in the Bath, diue with his Head so far vnder Water, as he may put his Head into the Paile; & there wil come as much Aire bubling forth, as will make Roome for his Head. Then let him speak; and any that shal stand without, shal heare his Voice plainly; but yet made extreme sharp and exile, like the Voice of Puppets: But yet the Articulate Sounds of the Words will not be co¯founded. Note that it may be much more handsomely done, if the Paile be put ouer the Mans head aboue Water, and then he cowre downe, and the Paile be pressed downe with him. Note that a Man must kneele or sit, that he may be lower than the Water. A Man would thinke, that the Sicilian Poet had knowledge of this Experiment; For he saith; That Hercules Page Hylas went with a Water-pot, to fill it at a pleasant Fountaine, that was neere the Shore, and that the Nymphs of the Fountaine fell in loue with the Boy,

and pulled him vnder Water, keeping him aliue; And that Hercules missing his Page, called him by his Name, aloud, that all the Shore rang of it; And that Hylas from within the Water, answered his Master; But (that which is to the present purpose) with so small and exile a Voice, as Hercules thought he had beene three miles off, when the Fountaine (indeed) was fast by.

In Lutes, and Instruments of Strings, if you stop a String high, (whereby it hath lesse Scope to tremble) the Sound is more Treble, but yet more dead.

Take two Sawcers, and strike the Edge of the one against the Bottome of the other, within a Paile of Water; And you shall finde, that as you put the Sawcers lower, and lower, the Sound groweth more flat; euen while Part of the Sawcer is aboue the Water; But that Flatnesse of Sound is ioyned with a Harshnesse of Sound; which (no doubt) is caused by the Inequalitie of the Sound, which commeth from the Part of the Sawcer vnder the Water, and from the Part aboue. But when the Sawcer is wholly vnder the Water, the Sound becommeth more cleare, but farre more low; And as if the Sound came from a farre off.

A Soft Body dampeth the Sound, much more than a Hard; As if a Bell hath Cloth, or Silke wrapped about it, it deadeth the Sound more, than if it were Wood. And therefore in Clericalls, the Keyes are lined; And in Colledges they vse to line the Tablemen.

Triall was made in a Recorder, after these seuerall manners. The Bottome of it was set against the Palme of the Hand; stopped with Wax round about; set against a Damaske Cushion; Thrust into Sand; Into Ashes; Into Water, (halfe an Inch vnder the Water;) Close to the Bottome of a Siluer Basin; And still the Tone remained: But the Bottome of it was set against a Woollen Carpet; A Lining of Plush; A Locke of Wooll, (though loosely put in;) Against Snow; And the Sound of it was quite deaded, and but Breath.

Iron Hot produceth not so full a Sound, as when it is Cold; For while it is hot, it appeareth to be more Soft, and lesse Resounding. So likewise Warme Water, when it falleth, maketh not so full a Sound, as Cold: And I conceiue it is softer, and neerer the Nature of Oyle; For it is more slippery; As may be perceiued, in that it scowreth better.

Let there be a Recorder made, with two Fipples at each end one; The Truncke of it of the length of two Recorders, and the Holes answerable toward each end; And let two play the same Lesson vpon it, at an Vnison; And let it be noted, whether the Sound be confounded; or amplified; or dulled. So likewise let a Crosse be made, of two Trunckes (thorow-out) hollow; And let two speake, or sing, the one long-waies, the other trauerse: And let two heare at the opposite Ends; And note, whether the Sound be confounded; amplified; or dulled. Which two Instances will also giue light to the Mixture of Sounds; wherof we shall speake hereafter.

A Bellowes blowne in at the Hole of a Drum, and the Drum then strucken, maketh the Sound a little flatter, but no other apparent Alteration. The Cause is manifest; Partly for that it hindreth the Issue of the Sound; And partly for that it maketh the Aire, being blowne together, lesse moueable.

The Loudnesse, and Softnesse of Sounds, is a Thing distinct from the Magnitude and Exility of Sounds; For a Base String, though softly strucken, giueth the greater Sound; But a Treble String, if hard strucken, will be heard much further off. And the Cause is, for that the Base String striketh more Aire; And the Treble lesse Aire, but with a sharper Percussion.

It is therefore the Strength of the Percussion, that is a Principall Cause of the Loudnesse or Softnesse of Sounds: As in knocking harder or softer; Winding of a Horne stronger or weaker; Ringing of a Hand-bell harder or softer, &c. And the Strength of this Percussion, consisteth, as much, or more, in the Hardnesse of the Body Percussed, as in the Force of the Body Percussing: For if you strike against a Cloth, it will giue a lesse Sound; If against Wood, a greater; If against Metall, yet a greater; And in Metals, if you strike against Gold, (which is the more pliant,) it giueth the flatter Sound; If against Siluer, or Brasse, the more Ringing Sound. As for Aire, where it is strongly pent, it matcheth a Hard Body. And therefore we see in discharging of a Peece, what a great Noise it maketh. We see also, that the Charge with Bullet; Or with Paper wet, and hard stopped; Or with Powder alone, rammed in hard; maketh no great difference in the Loudnesse of the Report.

The Sharpnesse or Quicknesse of the Percussion, is a great Cause of the Loudnesse, as well as the Strength: As in a Whip, or Wand, if you strike the Aire with it; the Sharper and Quicker you strike it, the Louder Sound it giueth. And in playing vpon the Lute, or Virginalls, the quicke Stroke or Touch, is a great life to the Sound. The Cause is, for that the Quicke Striking cutteth the Aire speedily; wheras the Soft Striking doth rather beat, than cut.

The Communication of Sounds (as in Bellies of Lutes, Empty Vessells, &c.) hath beene touched obiter, in the Maioration of Sounds: But it is fit also to make a Title of it apart.

The Experiment for greatest Demonstration of Communication of Sounds, is the Chiming of Bells; where if you strike with a Hammer vpon the Vpper Part, and then vpon the Midst, and then vpon the Lower, you shall finde the Sound to be more Treble, and more Base, according vnto the Concaue, on the Inside; though the Percussion be onely on the Outside.

When the Sound is created betweene the Blast of the Mouth, and the Aire of the Pipe, it hath neuerthelesse some Communication with the Matter of the Sides of the Pipe, and the Spirits in them contained; for in a Pipe, or Trumpet, of Wood, and Brasse, the Sound will be diuers; So if the Pipe be couered with Cloth, or Silke, it will giue a diuers Sound, from that it would doe of it selfe; So, if the Pipe be a little wet on the Inside, it will make a differing Sound, from the same Pipe dry.

That Sound made within Water, doth communicate better with a hard Body thorow Water, than made in Aire, it doth with Aire; Vide Experimentum, 134.

We haue spoken before (in the Inquisition touching Musicke,) of Musicall Sounds, wherunto there may be a Concord or Discord in two Parts; Which Sounds vve call Tones: And likewise of Immusicall Sounds; And haue giuen the Cause, that the Tone proceedeth of Equality, and the other of Inequality. And we haue also expressed there, what are the Equall Bodies that giue Tones, and what are the Vnequall that giue none. But now we shall speake of such Inequality of Sounds, as proceedeth, not from the Nature of the Bodies themselues, but is

Accidentall; Either from the Roughnesse, or Obliquity of the Passage; Or from the Doubling of the Percutient; Or from the Trepidation of the Motion.

A Bell, if it haue a Rift in it, whereby the Sound hath not a cleare Passage, giueth a Hoarse and Iarring Sound; So the Voice of Man, when by Cold taken the Wesill groweth rugged, and (as we call it) furred, becommeth hoarse. And in these two Instances, the Sounds are Ingrate; because they are meerely Vnequall: But, if they be Vnequall in Equality, then the Sound is Gratefull, but Purling.

All Instruments, that haue either Returnes, as Trumpets; Or Flexions, as Cornets; Or are Drawne vp, and put from, as Sackbuts; haue a Purling Sound; But the Recorder, or Flute, that haue none of these Inequalities, giue a cleare Sound. Neuerthelesse, the Recorder it selfe, or Pipe moistened a little in the Inside, soundeth more solemnly, and with a little Purling, or Hissing. Againe, a Wreathed String, such as are in the Base Strings of Banderaes, giueth also a Purling Sound.

But a Lute-string, if it be meerely Vnequall in his Parts, giueth a Harsh and Vntuneable Sound; which Strings we call False, being bigger in one Place than in another; And therefore Wire-strings are neuer False. We see also, that when we try a False Lute-string, wee vse to extend it hard betweene the fingers, and to fillip it; And if it giueth a double Species, it is True; But if it giueth a treble, or more, it is False.

Waters, in the Noise they make as they runne, represent to the Eare a Trembling Noise; And in Regalls, (where they haue a Pipe, they call the Nightingale-Pipe, which containeth Water) the Sound hath a continuall Trembling: And Children haue also little Things they call Cockes, which haue Water in them; And when they blow, or whistle in them, they yeeld a Trembling Noise; Which Trembling of Water, hath an assinity with the Letter L. All which Inequalities of Trepidation, are rather pleasant, than otherwise.

All Base Notes, or very Treble Notes, giue an Asper Sound; For that the Base striketh more Aire, than it can well strike equally: And the Treble cutteth the Aire so sharpe, as it returneth too swift, to make the Sound Equall: And therefore a Meane, or Tenor, is the sweetest Part.

We know Nothing, that can at pleasure make a Musicall, or Immusicall Sound, by voluntary Motion, but the Voice of Man, and Birds. The Cause is, (no doubt) in the Weasill or Wind-pipe, (which we call Aspera Arteria,) which being well extended, gathereth Equality; As a Bladder that is wrinckled, if it be extended, becommeth smooth. The Extension is alwaies more in Tones, than in Speech: Therefore the Inward Voice of Whisper can neuer a giue Tone: And in Singing, there is (manifestly) a greater Working and Labour of the Throat, than in Speaking; As appeareth in the Thrusting out, or Drawing in of the Chinne, when we sing.

The Humming of Bees, is an Vnequall Buzzing; And is conceiued, by some of the Ancients, not to come forth at their Mouth, but to be an Inward Sound, But (it may be) it is neither; But from the motion of their Wings; For it is not heard but when they stirre.

All Metalls quenched in Water, giue a Sibilation or Hissing Sound; (which hath an Affinity with the letter Z.) notwithstanding the Sound be created betweene the Water or Vapour, and the Aire. Seething also, if there be but small Store of Water, in a Vessell, giueth a Hissing Sound; But Boyling in a full Vessell, giueth a Bubling Sound, drawing somewhat neare to the Cocks vsed by Children.

Triall would be made, whether the Inequality, or Interchange of the Medium, will not produce an Inequality of Sound; As if three Bells were made one within another, and Aire betwixt Each; And then the outermost Bell were chimed with a Hammer, how the Sound would differ from a Simple Bell. So likewise take a Plate of Brasse, and a Plancke of Wood, and ioyne them close together, and knock vpon one of them, and see if they doe not giue an vnequall Sound. So make two or three Partitions or Wood in a Hogshead, with Holes or Knots in them; And marke the difference of their Sound, from the Sound of an Hogshead, without such Partitions.

It is euident, that the Percussion of the Greater Quantity of Aire, causeth the Baser Sound; And the lesse Quantity, the more Treble Sound. The Percussion of the Greater Quantity of Aire, is produced by the Greatnesse of the Body

Percussing; By the Latitude of the Concaue, by which the Sound passeth; and by the Longitude of the same Concaue. Therfore we see that a Base string, is greater than a Treble; A Base Pipe hath a greater Bore than a Treble; And in Pipes, and the like, the lower the Note Holes be, and the further off from the Mouth of the Pipe, the more Base Sound they yeeld; And the nearer the Mouth, the more Treble. Nay more, if you strike an Entire Body, as an Andiron of Brasse, at the Top, it maketh a more Treble Sound; And at the Bottome a Baser.

It is also euident, that the Sharper or Quicker Percussion of Aire causeth the more Treble Sound; And the Slower or Heauier, the more Base Sound. So we see in Strings; the more they are wound vp, and strained; (And thereby giue a more quicke Start-backe;) the more Treble is the Sound; And the slacker they are, or lesse wound vp, the Baser is the Sound. And therfore a Bigger String more strained, and a Lesser String, lesse strained, may fall into the same Tone.

Children, Women, Eunuchs haue more small and shrill Voices, than Men. The Reason is, not for that Men haue greater Heat, which may make the Voice stronger, (for the strength of a Voice or Sound, doth make a difference in the Loudnesse or Softnesse, but not in the Tone;) But from the Dilatation of the Organ; which (it is true) is likewise caused by Heat. But the Cause of Changing the Voice, at the yeares of Puberty, is more obscure. It seemeth to be, for that when much of the Moisture of the Body, which did before irrigate the Parts, is drawne downe to the Spermaticall vessells; it leaueth the Body more hot than it was; whence commeth the Dilatation of the Pipes: For we see plainly, all Effects of Heat, doe then come on; As Pilosity, more Roughnesse of the Skinne, Hardnesse of the Flesh, &c.

The Industry of the Musitian, hath produced two other Meanes of Strayning, or Intension of Strings, besides their Winding vp. The one is the Stopping of the String with the Finger; As in the Necks of Lutes, Viols, &c. The other is the Shortnesse of the String; As in Harps, Virginalls, &c. Both these haue one, and the same reason; For they cause the String to giue a quicker Start.

In the Straining of a String, the further it is strained, the lesse Superstraining goeth to a Note; For it requireth good Winding of a String, before it will make

any Note at all: And in the Stops of Lutes, &c. the higher they goe, the lesse Distance is betweene the Frets.

If you fill a Drinking-Glasse with Water, (especially one Sharp below, and Wide aboue,) and fillip vpon the Brim, or Outside; And after empty Part of the Water, and so more and more, and still try the Tone by Fillipping; you shall finde the Tone fall, and be more Base, as the Glasse is more Empty.

The Iust and Measured Proportion of the Aire Percussed, towards the Basenesse or Treblenesse of Tones, is one of the greatest Secrets in the Contemplation of Sounds. For it discouereth the true Coincidence of Tones into Diapasons; Which is the Returne of the same Sound. And so of the Concords and Discords, betweene the Vnison, and Diapason; Which we haue touched before, in the Experiments of Musicke; but thinke fit to resume it here, as a principall Part of our Enquiry touching the Nature of Sounds. It may be found out in the Proportion of the Winding of Strings; In the Proportion of the Distance of Frets; And in the Proportion of the Concaue of Pipes, &c. But most commodiously in the last of these.

Try therfore the Winding of a String once about, as soone as it is brought to that Extension, as will giue a Tone; And then of twice about; And thrice about, &c. And marke the Scale or Difference of the Rise of the Tone: Wherby you shall discouer, in one, two Effects; Both the Proportion of the Sound towards the Dimension of the Winding; And the Proportion likewife of the Sound towards the String, as it is more or lesse strained. But note that to measure this, the way will be, to take the Length in a right Line of the String, vpon any Winding about of the Pegge.

As for the Steps, you are to take the Number of Frets; And principally the Length of the Line, from the first Stop of the String, vnto such a Stop as shall produce a Diapason to the former Stop, vpon the same String.

But it will best (as it is said) appeare, in the Bores of Wind-Instruments: And therfore cause some halfe dozen Pipes, to be made, in length, and all things else, alike, with a single, double, and so on to a sextuple Bore; And so marke what Fall of Tone euery one giueth. But still in these three last Instances, you must

diligently obserue, what length of String, or Distance of Stop, or Concaue of Aire, maketh what Rise of Sound. As in the last of these (which (as we said) is that, which giueth the aptest demonstration,) you must set downe what Encrease of Concaue goeth to the Making of a Note higher; And what of two Notes; And what of three Notes; And so vp to the Diapason: For then the great Secret of Numbers, and Proportions, will appeare. It is not vnlike, that those that make Recorders, &c. know this already: for that they make them in Sets. And likewise Bell-founders in fitting the tune of their Bells. So that Enquiry may saue Triall. Surely, it hath beene obserued by one of the Ancients, that an Empty Barrell knocked vpon with the finger, giueth a Diapason to the Sound of the like Barrellfull; But how that should be, I doe not well vnderstand; For that the knocking of a Barrellfull, or Empty, doth scarce giue any Tone.

There is required some sensible Difference in the Proportion of creating a Note, towards the Sound it selfe, which is the Passiue: And that it be not too neare, but at a distance. For in a Recorder, the three vppermost Holes, yeeld one Tone; which is a Note lower than the Tone of the first three. And the like (no doubt) is required in the Winding or Stopping of Strings.

There is another Difference of Sounds, which we will call Exteriour, and Interiour. It is not Soft, nor Loud: Nor it is not Base, nor Treble: Nor it is not Musicall, nor Immusicall: Though it be true, that there can be no Tone in an Interiour Sound: But on the other side, in an Exteriour Sound, there may be both Musicall and Immusicall. We shall therfore enumerate them, rather than precisely distinguish them; Though (to make some Adumbration of that we meane) the Interiour is rather an Impulsion or Contusion of the Aire, than an Elision or Section of the same. So as the Percussion of the one, towards the other, differeth, as a Blow differeth from a Cut.

In Speech of Man, the Whispering, (which they call Susurrus in Latine,) whether it be louder or softer, is an Interiour Sound; But the Speaking out, is an Exteriour Sound; And therfore you can neuer make a Tone, not sing in Whispering; But in Speech you may: So Breathing, or Blowing by the Mouth, Bellowes, or Wind, (though loud) is an Interiour Sound; But the Blowing thorow

a Pipe, or Concaue, (though soft) is an Exteriour. So likewise, the greatest Winds, if they haue no Coarctation, or blow not hollow, giue an Interiour Sound; The Whistling or hollow Wind yeeldeth a Singing, or Exteriour Sound; The former being pent by some other Body; The latter being pent in by his owne Density: And therfore we see, that when the Wind bloweth hollow, it is a Signe of Raine. The Flame, as it moueth within it selfe, or is blowne by a Bellowes, giueth a Murmur or Interiour Sound.

There is no Hard Body, but strucke against another Hard Body, will yeeld an Exteriour Sound, greater or lesser: In so much as if the Percussion be ouer-soft, it may induce a Nullity of Sound; But neuer an Interiour Sound; As when one treadeth so softly, that he is not heard.

Where the Aire is the Percutient, pent, or not pent, against a Hard Body, it neuer giueth an Exteriour Sound; As if you blow strongly with a Bellowes against a Wall.

Sounds (both Exteriour and Interiour,) may be made, as well by Suction, as by Emission of the Breath: As in Whistling, or Breathing.

It is euident, and it is one of the strangest Secrets in Sounds, that the whole Sound is not in the whole Aire onely; But the whole Sound is also in euery small Part of the Aire. So that all the curious Diuersity of ArticulateSounds, of the Voice of Man, or Birds, will enter at a small Cranny, Inconfused.

The Vnequall Agitation of the Winds, and the like, though they bee materiall to the Carriage of the Sounds, further, or lesse way; yet they doe not confound the Articulation of them at all, within that distance that they can be heard; Though it may be, they make them to be heard lesse Way, than in a Still; as hath beene partly touched.

Ouer-great Distance confoundeth the Articulation of Sounds; As we see, that you may heare the Sound of a Preachers voice, or the like, when you cannot distinguish what he saith. And one Articulate Sound will confound another; As when many speake at once.

In the Experiment of Speaking vnder Water, when the Voice is reduced to such an Extreme Exility, yet the Articulate Sounds, (which are the Words,) are

not confounded; as hath beene said.

I conceiue, that an Extreme Small, or an Extreme Great Sound, cannot be Articulate; But that Articulation requireth a Mediocrity of Sound: For that the Extreme Small Sound confoundeth the Articulation by Contracting; And the Great Sound, by Dispersing: And although (as was formerly said) a Sound Articulate, already created, will be contracted into a small Cranny; yet the first Articulation requireth more Dimension.

It hath beene obserued, that in a Roome, or in a Chappell, Vaulted below, and Vaulted likewise in the Roofe, a Preacher cannot be heard so well, as in the like Places not so Vaulted. The Cause is, for that the Subsequent Words come on, before the Precedent words vanish: And therfore the Articulate Sounds are more confused, though the Grosse of the Sound be greater.

The Motions of the Tongue, Lips, Throat, Pallat, &c. which goe to the Making of the seuerall Alphabeticall Letters, are worthy Enquiry, and pertinent to the present Inquisition of Sounds: But because they are subtill, and long to describe, we will refer them ouer, and place them amongst the Experiments of Speech. The Hebrewes haue beene diligent in it, and haue assigned, which Letters are Labiall, which Dentall, which Gutturall, &c. As for the Latines, and Grecians, they haue distinguished betweene Semi-vowels, and Mutes; And in Mutes, betweene Mute Tenues, Media, and Aspirata; Not amisse; But yet not diligently enough. For the speciall Strokes, & Motions, that create those Sounds, they haue little enquired: As that the Letters, B. P. F. M. are not expressed, but with the Contracting, or Shutting of the Mouth; That the Letters N. and B. cannot be pronounced, but that the Letter N. will turne into M. As Hecatonba, will be Hecatomba. That M. and T. cannot be pronounced together, but P. will come betweene; as Emtus, is pronounced Emptus; And a Number of the like. So that if you enquire to the full; you will finde, that to the Making of the whole Alphabet, there will be fewer Simple Motions required, than there are Letters.

The Lungs are the most Spongy Part of the Body; And therefore ablest to contract, and dilate it selfe: And where it contracteth it selfe, it expelleth the Aire; which thorow the Artire, Throat, and Mouth, maketh the Voice: But yet

Articulation is not made, but with the helpe of the Tongue, Pallate, and the rest of those they call Instruments of voice.

There is sound a Similitude, betweene the Sound that is made by Inanimate Bodies, or by Animate Bodies, that haue no Voice Articulate; and diuers Letters of Articulate Voices: And commonly Men haue giuen such Names to those Sounds, as doe allude vnto the Articulate Letters. As Trembling of Water hath Resemblance with the Letter L; Quenching of Hot Mettalls, with the Letter Z; Snarling of Dogs, with the Letter R; The Noise of Scritchowles, with the Letter Sh; Voice of Cats, with the Dypthong Eu; Voice of Cuckoes, with the Dypthong On; Sounds of Strings, with the Letter Ng: So that if a Man, (for Curiosity, or Strangenesse sake,) would make a Puppet, or other Dead Body, to pronounce a Word; Let him consider, on the one Part, the Motion of the Instruments of Voice; and on the other part the like Sounds made in Inanimate Bodies; And what Conformity there is that causeth the Similitude of Sounds; And by that he may minister light to that Effect.

III. Century.

ALL Sounds (whatsoeuer) moue Round; That is to say; On all Sides; Vpwards; Downwards; Forwards; and Backwards. This appeareth in all Instances.

Sounds doe not require to bee conueyed to the Sense, in a Right Line, as Visibles doe, but may be Arched; Though it be true, they moue strongest in a Right Line; Which neuerthelesse is not caused by the Rightnesse of the Line, but by the Shortnesse of the distance; Linea recta breuissima. And therefore we see, if a Wall be betweene, and you speake on the one Side, you heare it on the other; Which is not because the Sound Passeth thorow the Wall; but Archeth ouer the Wall.

If the Sound be Stopped and Reperenssed, it commeth about on the other Side, in an Oblique Line. So, if in a Coach, one side of the Boot be downe, and the other vp; And a Begger beg on the Close Side; you would thinke that he were on the Open Side. So likewise, if a Bell or Clocke, be (for Example) on the North-side of a Chamber; And the Window of that Chamber be vpon the South; He that is in the Chamber, will thinke the Sound came from the South.

Sounds, though they spread round, (so that there is an Orbe, or Spherical Area of the Sound;) yet they moue strongest, and goe furthest in the Fore-lines, from the first Locall Impulsion of the Aire. And therefore in Preaching, you shall heare the Preachers Voice, better, before the Pulpit, than behinde it, or on the Sides, though it stand open. So a Plarquebuz, or Ordnance, will be further heard, forwards, from the Mouth of the Peece, than backwards, or on the Sides.

It may bee doubted, that Sounds doe moue better, Downwards than Vpwards, Pulpits are placed high aboue the People. And when the Ancient Generalls spake to their Armies, they had euer a Mount of Turfe cast vp, whereupon they stood: But this may be imputed to the Stops and Obstacles, which the voice meeteth with, when one speaketh vpon the leuell. But there seemeth to be more in it: For it may bee, that Spirituall Species, both of Things Visible and Sounds, doe moue better Downewards than Vpwards. It is a strange Thing, that to Men standing

below on the Ground, those that be on the Top of Pauls, seeme much lesse then they are, and cannot bee knowne; But to Men aboue, those below seeme nothing so much lessened, and may bee knowne; yet it is true, that all things to them aboue, seeme also somewhat contracted, and better collected into Figure: as Knots in Gardens shew best from an Vpper window, or Tarras.

But to make an exact Triall of it, let a Man stand in a Chamber, not much aboue the Ground, and speake out at the window, through a Trunke, to one standing on the Ground, as softly as he can, the other laying his Eare close to the Truncke: Then viâ versa, let the other speake below keeping the same Proportion of Softnesse; And let him in the Chamber lay his Eare to the Trunck: And this may be the aptest Meanes, to make a Iudgement, whether Sounds descend, or ascend, better.

After that Sound is created, (which is in a moment,) wee finde it continueth some small time, melting by little and little. In this there is a wonderfull Errour amongst Men, who take this to be a Continuance of the First Sound; whereas (in truth) it is a Renouation, and not a Continuance: For the Body percussed, hath by reason of the Percussion, a Trepidation wrought in the Minute Parts; and so reneweth the Percussion of the Aire. This appeareth manifestly, because that the Melting Sound of a Bell, or of a String strucken, which is thought to be a Continuance, ceaseth as soone as the Bell or String are touched. As in a Virginall, as soone as euer the Iacke falleth, and toucheth the String, the Sound ceaseth; And in a Bell, after you haue chimed vpon it, if you touch the Bell, the Sound ceaseth, And in this you must distingush, that there are two Trepidations: The one Manifest, and Locall; As of the Bell, when it is Pensile: The other Secret, of the Minute Parts; such as is described in the 9th Instance. But it is true, that the Locall helpeth the Secret great'y. We see likewise that in Pipes, and other winde Instruments, the Sound lasteth no longer, than the breath bloweth. It is true, that in Organs, there is a confused Murmur for a while, after you haue plaied; But that is but while the Bellowes are in Falling.

It is certaine, that in the Noise of great Ordnance, where many are shot off together, the Sound will be carried, (at the least) twenty Miles vpon the land, and

much further vpon the Water. But then it will come to the Eare; Not in the Instant of the Shooting off, but it will come an Houre, or more later. This must needs be a Continuance of the First Sound; For there is no Trepidation which should renew it. And the Touching of the Ordnance would not extinguish the Sound the sooner: So that in great Sounds the Continuance is more than Momentany.

To try exactly the time wherein Sound is Delated. Let a Man stand in a Steeple, and haue with him a Taper; And let some Vaile be put before the Tapar; And let another Man stand in the Field a Mile off. Then let him in the Steeple strike the Bell; And in the same Instant withdraw the Vaile; And so let him in the Field tell by his Pulse what distance of Time there is, betweene the Light seene, and the Sound heards For it is certaine that the Delation of Light is in an Instant. This may be tried in farre greater Distances, allowing greater Lights and Sounds.

It is generally knowne and obserued, that Light, and the Obiect of Sight, moue swifter than Sound; For we see the Flash of a Peece is seene sooner, than the Noise is heard. And in Flewing wood, if one be some distance off, he shall see the Arme lifted vp for a second Stroke, before he heare the Noise of the first. And the greater the Distance, the greater is the Preuention: As we see in Thunder, which is farre off; where the Lightning Precedeth the Cracke a good space.

Colours, when they represent themselues to the Eye, fade not, nor melt not by Degrees, but appeare still in the same Strength; But Sounds melt, and vanish, by little and little. The Cause is, for that Colours participate nothing with the Motion of the Aire; but Sounds doe. And it is a plaine Argument, that Sound participateth of some Locall Motion, of the Aire, (as a Cause Sinè quônon.) in that, it perisheth so suddenly; For in euery Section, or Impulsion of the Aire, the Aire doth suddenly restore and reunite it selfe; which the Water also doth, but nothing so swiftly.

In the Trialls of the Passage, or Not Passage of Sounds, you must take heed, you mistake not the Passing By the Sides of a Body, for the Passing thorow a

Body: And therefore you must make the Intercepting Body very close; For Sound will passe thorow a small Chincke.

Where Sound passeth thorow a Hard, or Close Body (as thorow Water; thorow a Wall; thorow Metall, as in Hawkes Bells stopped; &c.) the Hard, or Close Body, must be but thinne and small; For else it deadeth and extinguisheth the Sound vtterly. And therefore, in the Experiment of Speaking in Aire vnder Water, the Voice must not be very deepe within the Water: For then the Sound pierceth not. So if you speake on the further side of a Close Wall, if the Wall be very thicke, you shall not be heard: And if there were an Hogshead emptie, whereof the Sides were some two Foot thicke, and the Bunghole stopped; I conceiue the Resounding Sound, by the Communication of the Outward Aire, with the Aire within, would be little or none, But onely you shall heare the Noise of the Outward Knocke, as if the Vessell were full.

It is certaine, that in the Passage of Sounds thorow Hard Bodies, the Spirit of Pneumaticall Part of the Hard body it selfe, doth cooperate; But much better, when the Sides of that Hard Body are strucke, than when the Percussion is onely within, without: Touch of the Sides: Take therefore a Hawkes Bell, the holes; stopped vp, and hang it by a threed, within a Bottle Glasse; And stop the Mouth of the Glasse, very close with Wax; And then shake the Glasse, and see whether the Bell giue any Sound at all, or how weake? But note, that you must in stead of the Threed, take a Wire; Or else let the Glasse haue a great Belly; lest when you shake the Bell, it dash vpon the Sides of the Glasse.

It is plaine, that a very Long, and Downe-right Arch, for the Sound to passe, will extinguish the Sound quite; So that that Sound, which would be heard ouer a wall, will not be heard ouer a Church; Nor that Sound, which will be heard, if you stand some distance from the wall, will be heard if you stand close vnder the Wall.

Soft and Foraminous Bodies, in the first Creation of the Sound, will dead it; For the Striking against Cloth, or Furre, will make little Sound; As hath beene said: But in the Passage of the Sound, they will admit it better than Harder Bodies; As we see, that Curtaines, and Hangings, will not stay the Sound much;

But Glasse-windowes, if they be very Close, will checke a Sound more, than the like Thicknesse of Cloth. Wee see also, in the Rumbling of the Belly, how easily the Sound passeth thorow the Guts, and Skin.

It is worthy the Enquiry, whether Great Sounds, (As of Ordnance, or Bells,) become not more Weake, and Exile, when they passe thorow Small Crannies. For the Subtilties of Articulate Sounds, (it may be,) may passe thorow Small Crannies, not confused; But the Magnitude of the Sound (perhaps,) not so well.

The Mediums of Sounds are Aire; Soft and Porous Bodies; Also Water. And Hard Bodies refuse not altogether to be Mediums of Sounds. But all of them are dull and vnapt Deferents, except the Airè.

In Aire, the Thinner or Drier Aire, carrieth not the Sound so well, as the more Dense; As appeareth in Night Sounds; And Euening Sounds; And Sounds in moist Weather, and Southerne Winds. The reason is already mentioned in the Title of Maioration of Sounds; Being for that Thinne Aire is better pierced; but Thicke Aire preserueth the Sound better from Wast; Let further Triall be made by Hollowing in Mists, and Gentle Showers: For (it may be) that will somewhat dead the Sound.

How farreforth Flame may be a Medium of Sounds, (especially of such Sounds as are created by Aire, and not betwixt Hard Bodies) let it be tried, in Speaking where a Bonsire is betweene; But then you must allow, for some disturbance, the Noise that the Flame it selfe maketh.

Whether any other Liquours, being made Mediums, cause a Diuersity of Sound from Water, it may be tried: As by the Knapping of the Tongs; Or Striking of the Bottome of a vessell, filled either with Milke, or with Oyle; which though they be more light, yet are they more vnequall Bodies than Aire.

Of the Natures of the Mediums, we haue now spoken; As for the Disposition of the said Mediums, it doth consist in the Penning, or not Penning of the Aire; Of which we haue spoken before, in the Title of Delation of Sounds: It consisteth also in the Figure of the Concaue, through which it passeth; Of which we will speake next.

How the Figures of Pipes, or Concaues, through which Sounds passe; Or of other Bodies deferent; conduce to the Varietie and Alteration of the Sounds; Either in respect of the Greater Quantitie, or lesse Quantitie of Aire, which the Concaues receiue; Or in respect of the Carrying of Sounds longer or shorter way; Or in respect of many other Circumstances; they haue beene touched, as falling into other Titles. But those Figures, which we now are to speake of, wee intend to be, as they concerne the Lines, through which Sound passeth; As Straight; Crooked; Angular; Circular; &c.

The Figure of a Bell pertaketh of the Pyramis, but yet comming off, and dilating more suddenly. The Figure of a Hunters Horne, and Cornet, is oblique; yet they haue likewise Straight Heroes; which if they be of the same Bore with the Oblique, differ little in Sound; Saue that the Straight require somewhat a stronger Blast. The Figures of Recorders, and Flates, and Pipes are straight; But the Recorder hath a lesse Bore, and a greater; Aboue, and below. The Trumpts hath the Figure of the Letter S: which maketh that Purling Sound, &c. Generally, the Straight Like hath the cleanest and roundest Sound, And the Crooked the more Hoarse, and larring.

Of a Sinnous Pipe, that may haue some foure Flexions, Triall would be made, Likewise of a Pipe, made like a Crosse, open in the middest. And so likewise of an Angular Pipe: And see what will be the Effects of these seuerall Sounds. And so againe of a Circular Pipe; As if you take a Pipe perfect Round, and make a Hole whereinto you shall blow; And another Hole not farre from that; But with a Trauerse or Stope betweene them; So that your Breath may goe the Round of the Circle, and come forth at the second Hole. You may trie likewise Per — ssions of Solide Bodies of seuerall Figures; As Globes, Flare, Cobes, Croffes, Triangles, &c. And their Combinasions; As Flat against Flat; And Co — ex against Con — ; And Conn — against Flat, &c. And marks well the diversities of the Sounds. Tri —— the difference in Sound of seuerall Crasitudre of Hard Bodies percussed; And take knowledge of the — of the Sounds. I my selfe haue tried, that a Bell of Gold yeeldeth an excellent Sound, not infariour to that of Siluer, or Brasse, but rather better: yet wee see that a

peece of Money of Gold soundeth farre more flat than a peece of Money of Siluer.

The Harpe hath the Concaue, not along the Strings, but acrosse the Strings; And no Instrument hath the Sound so Melting, and Prolonged, as the Irish Harpe. So as I suppose, that if a Virginall were made with a double Concaue; the one all the length as the Virginall hath; the other at the End of the Strings, as the Harpe hath; It must needs make the Sound perfecter, and not so Shallow, and Iarring. You may trie it, without any Sound-Board along, but only Harpe-wise, at one End of the Strings: Or lastly with a double Concaue, at Each end of the Strings one.

There is an apparent Diuersitie betweene the Species Visible, and Audible, in this; That the Visible doth not mingle in the Medium, but the Audible doth. For if wee looke abroad, wee see Heauen, a number of Stars, Trees, Hills, Men, Beasts, at once. And the Species of the one doth not confound the other. But if so many Sounds came from seuerall Parts, one of them would vtterly confound the other. So wee see, that Voices or Consorts of Musicke doe make an Harmony by Mixture, which Colours doe not. It is true neuerthelesse, that a great Light drowneth a smaller, that it cannot be seene; As the Sunne that of a Gloworme; as well as a Great Sound drowneth a lesser. And I suppose likewise, that if there were two Lanthornes of Glasse, the one a Grimsin, and the other an Azure, and a Candle within either of them, those Coloured Lights would mingle and cast vpon a White Paper - Purple Colour. And euen in Colours, they yeeld a faint and weake Mixture: For white walls make Roomes more lightsome than blacke, &c. But the Cause of the Confusion in Sounds, and the Inconfusion in Species Visible, is, For that the Sight worketh in Right Lines, and maketh seuerall Cones; And so there can be no Coincidence in the Eye, or Visuall Point: But Sounds, that moue in Oblique and Arcuate Lines, must needs encounter, and disturbe the one the other.

The sweetest and best Harmony is, when euery Part, or Instrument, is not heard by it selfe, but a Conflation of them all; Which requireth to stand some

distance off. Euen as it is in the Mixture of Perfumes; Or the Taking of the Smells of seuerall Flowers in the Aire.

The Disposition of the Aire, in other Qualities, except it be ioyned with Sound, hath no great Operation vpon Sounds: For whether the Aire be lightsome or darke, hot or cold, quiet or stirring, (except it be with Noise) sweet-smelling, or stinking, or the like: it importeth not much: Some petty Alteration or difference it may make.

But Sounds doe disturbe and alter the one the other: Sometimes the one drowning the other, and making it not heard; Sometimes the one larring and discording with the other, and making a Confusion; Sometimes the one Mingling and Compounding with the other; and making an Harmony.

Two Voices of like lowdnesse, will not be heard, twice as farre, as one of them alone; And two Candles of like light, will not make Things seene twice as farre off, as one. The Cause is profound. But it seemeth that the Impressions from the Obiects of the Senses, doe mingle respectiu-ly, euery one with his kinde; But not in proportion, as is before demonstrated: And the reason may be, because the first Impression, which is from Priuatiue to Actiue, (As from Silence to Noise, or from Darknesse to Light,) is a greater Degree, than from Lesse Noise, to More Noise, or from Lesse Light, to More Light. And the Reason of that againe may be; For that the Aire, after it hath receiued a Charge, doth not receiue a Surcharge, or greater Charge, with like Appetite, as it doth the first Charge. As for the Encrease of Vertue, generally, what Proportion it beareth to the Encrease of the Matter, it is a large Field, and to be handled by it selfe.

All Reflexions Concurrent doe make Sounds Greater; But if the Body that createth, either, the Originall Sound, or the Reflexion, be cleane and smooth, it maketh them Sweeter. Triall may be made of a Lute, or Violl, with the Belly of polished Brasse, in stead of Wood. We see that euen in the Open Aire, the Wire String is sweeter, than the String of Guts. And we see that for Reflexion, Water excelleth; As in Musick neare the Water; Or in Eccho's.

It hath beene tried, that a Pipe a little moistened on the inside, but yet so as there be no Drops left, maketh a more solemne Sound, than if the Pipe were dry:

But yet with a sweet Degree of Sibilation, or Purling. As we touched it before in the title of Equality. The Cause is, for that all Things Porous, being superficially wet, and (as it were) betweene dry and wet, become a little more Euen and Smooth; But the Purling, (which must needs proceed of Inequality,) I take to be bred betweene the Smoothnesse of the in ward Surface of the Pipe, which is wet; And the Rest of the Wood of the Pipe, vnto which the Wet commeth nor, but it remaineth dry.

In Frosty weather, Mosicke within doores soundeth better. Which may be, by reason, not of the Disposition of the Aire, but of the Wood or String of the Instrument; which is made more Crispe, and so more porous and hollow: And we see that Old Lutes sound better than New, for the same reason. And so doe Lute Strings that haue beene kept long.

Sound is likewise Meliorated by the Mingling of open Aire with Pent Aire; Therefore Triall may be made, of a Lute or Violl with a double Belly; Making another Belly with a Knot oliet the Strings; yet so, as there be Roome enough for the Strings, and Roome enough to play below that Belly. Triall may be made also of an Irish Harpe, with a Concaue on both Sides; Whereas — seth to haue it but on one Side. The doubt may be, lest it should make too much Resounding; wherby one Note would ouertake anot —

If you sing into the Hole of a Drum, it maketh the Singing more sweet. And so I conceiue it would, if it were a Song in Parts, sung into seuerall Drums; And for handsomnesse and strangeness sake, it would not be amisse to haue a Curtaine betweene the Place where the Drums are, and the Hearers.

When a Sound is created in a Wind-Instrument, betweene the Breath and the Aire, yet if the Sound be communicate with a more equall Body of the Pipe, it meliorateth the Sound. For (no doubt) there would be a differing Sound in a Trumpet, or Pipe of Wood; And againe in a Trumpet or Pipe of Brasse. It were good to try Recorders and Hunters Hornes of Brasse, what the Sound would be.

Sounds are meliorated by the Intension of the Sense; where the Common Sense is collected most, to the particular Sense of Hearing, and the Sight suspended: And therefore, Sounds are sweeter, (as well as greater,) in the Night,

than in the Day; And I suppose, they are sweeter to blinde Men, than to Others: And it is manifest, that betweene Sleeping and Waking, (when all the Senses are bound and suspended) Musicke is farre sweeter, than when one is fully Waking.

It is Thing strange in Nature, when it is attentiuely considered; How Children, and some Birds, learne to imitate Speech. They take no Marke (at all) of the Motion of the Mouth of Him that speaketh; For Birds are as well taught in Darke, as by Light. The Sounds of Speech are very Curious and Exquisite: So one would thinke it were a Lesson hard to learne. It is true, that it is done with time, and by little and little, and with many Essayes and Proffers: But all this dischargeth not the Wonder. It would make a Man thinke (though this which we shall say may seeme exceeding strange) that there is some Transmission of Spirits; and that the Spirits of the Teacher put in Motion, should worke with the Spirits of the Learner, a Predisposition to offer to Imitate; And so to perfect the Imitation by degrees. But touching Operations by Transmissions of Spirits, (which is one of the highest Secrets in Nature,) we shall speake in due place; Chiefly when we come to enquire of Imagination. But as for Imitation, it is certaine, that there is in Men, and other Creatures, a predisposition to Imitate We see how ready Apes and Monkies are, to imitate all Motions of Man: And in the Catching of Dottrells, we see, how the Foolish Bird playeth the Ape in Gestures: And no Man (in effect) doth accompany with others, but he learneth, (ere he is aware,) some Gesture, or Voice, or Fashion of the other.

In Imitation of Sounds, that Man should be the Teacher, is no Part of the Matter; For Birds will learne one of another; And there is no Reward, by feeding, or the like, giuen them for the Imitation; And besides, you shall haue Parrots, that will not only Iimitate Voices, but Laughing, Knocking, Squeaking of a Doore vpon the Hinges, or of a Cart-wheele; And (in effect) any other Noise they heare.

No Beast can imitate the Speech of Men, but Birds onely; For the Ape it selfe that is so ready to imitate otherwise, attaineth not any degree of Imitation of Speech. It is true, that I haue knowne a Dog, that if one how led in his Eare, he would fall a how ling a great while. What should be the Aptnesse of Birds, in

comparison of Beasts, to imitate the Speech of Man, may be further enquired. We see that Beasts haue those Parts, which they count the Instruments of Speech, (as Lips, Teeth, &c.) liker vnto Man, than Birds. As for the Necke, by which the Throat passeth; we see many Beasts haue it, for the Length, as much as Birds. What better Gorge, or Attire, Birds haue, may be further enquired. The Birds that are knowne to be Speakers, are, Parrots, Pyes, layes, Dawes, and Rauens. Of which Parrots haue an adunque Bill, but the rest not.

But I conceiue, that the Apinesse of Birds, is not so much in the Conformitie of the Organs of Speech, as in their Attention. For Speech must come by Hearing, and Learning; And Birds giue more heed, and marke Sounds, more than Beasts; Because naturally they are more delighted with them, and practise them more; As appeareth in their Singing. We see also, that those that teach Birds to sing, doe keepe them Waking, to increase their Attention. We see also, that Cock-Birds, amongst SingingBirds, are euer the better Singers; which may be, because they are more liuely, and listen more.

Labour, and Intention to imitate voices, doth conduce much to Imitation: And therfore we see, that there be certaine P-nt-vimi that will represent the voices of Players of Enterludes, so to life, as if you see them not, you would thinke they were those Players themselues; and so the Voices of other Men that they heare.

There haue beene some, that could counterfeit the Distance of Voices, (which is a Secondary Obiect of Hearing,) in such sort; As when they stand fast by you, you would thinke the Speech came from a farre off, in a fearefull manner. How this is done, may be further enquired. But I see no great vse of it, but for Imposture, in counterseiting Ghosts or Spirits.

There be three Kindes of Reflexions of Sounds, A Reflexion Concurrent; A Reflexion Iterant, which we call Eccho; And a Super-reflexion, or an Eccho of an Eccho, wherof the first hath beene handled in the Title of Magnitude of Sounds: The Latter two we will now speake of.

The Reflexion of Species Visible, Mirrours, you may command; Because passing in Right Lines, they may be guided to any Point: But the Reflexion of

Sounds is hard to master; Because the Sound filling great Spaces in Arched Lines, cannot be so guided: and therfore we see there hath not beene practised, any Meanes to make Artificiall Eccho's. And no Eccho already knowne returneth in a very narrow Roome.

The Naturall Eccho's are made vpon Walls, Woods, Rockes, Hills, and Banckes; As for Waters, being neare, they make a Concurrent Eccho; But being further off, (as vpon a large Riuer) they make an Iterant Eccho: For there is no difference betweene the Concurrent Eccho, and the Iterant, but the Quicknesse, or Slownesse of the Returne. But there is no doubt, but Water doth helpe the Delation of Eccho; as well as it helpeth the Delution of Originall Sounds.

It is certaine, (as hath beene formerly touched,) that if you speake thorow a Truncke, stopped at the further end, you shall finde a Blast returne vpon your Mouth, but no Sound at all. The Cause is, for that the Closenesse, which preferueth the Originall, is not able to preserue the Reflected Sound: Besides that Eccho's are seldom created, but by loud Sounds. And therfore there is lesse hope of Artificiall Eccho's in Aire, pent in a narrow Concaue. Neuerthelesse it hath beene tried, that One leaning ouer a Well, of 25. Fathome deepe, and speaking, though but softly, (yet not so soft as a whisper,) the Water returned a good Audible Eccho. It would be tried, whether Speaking in Caues, where there is no Issue, faue where you speake, will not yeeld Eccho's, as Wells doe.

The Eccho commeth as the Originall Sound doth, in a Round Orbe of Aire: It were good to try the Creating of the Eccho, where the Body Repercussing maketh an Angle: As against the Returne of a Wall, &c. Also we see that in Mirrours, there is the like Angle of Incidence, from the Obiect to the Glasse, and from the Glasse to the Eye. And if you strike a Ball side-long, nor full vpon the Surface, the Rebound will be as much the contrary way; Whether there be any such Re-ilience in Eccho's, (that is, whether a Man shall heare better, if he stand aside the Body Repercussing, than if he stand where he speaketh, or any where in a right Line betweene;) may be tried. Triall likewise would be made, by Standing nearer the Place of Repercussing, than he that speaketh; And againe by

Standing further off, than hee that speaketh; And so Knowledge would be taken, whether Eccho's, as well as Originall Sounds, be not strongest neare hand.

There be many Places, where you shall heare a Number of Eccho's, one after another: And it is, when there is Variety of Hills, or Woods, some nearer, some further off: So that the Returne from the further, being last created, will be likewise last heard.

As the Voice goeth round, as well towards the Backe, as towards the Front of him that speaketh; So likewise doth the Eccho; For you haue many Back-Eccho's to the Place where you stand.

To make an Eccho, that will report, three, or foure, or fiue Words, distinctly, it is requisite, that the Body Repercussing, be a good distance off: For if it be neare, and yet not so neare, as to make a Concurrent Eccho, it choppeth with you vpon the sudden. It is requisite likewise, that the Aire be not much pent. For Aire, at a great distance, pent, worketh the same effect with Aire, at large, in a small distance. And therefore in the Triall of Speaking in the Well, though the Well was deepe, the Voice came backe, suddenly; And would beare the Report but of two Words.

For Eccho's vpon Eccho's, there is a rare Instance thereof in a Place, which I will now exactly describe. It is some three or foure Miles from Paris, neere a Towne called Pont-charenton; And some Bird-bolt shot, or more, from the Riuer of Seane. The Roome is a Chappell, or small Church. The Walls all standing, both at the Sides, and at the Ends. Two Rowes of Pillars, after the manner of Isles of Churches, also standing; The Roofe all open, not so much as any Embowment neere any of the walls left. There was against euery Pillar, a Stacke of Billets, aboue a Mans Height; which the Watermen, that bring Wood downe the Seane, in Stacks, and not in Boats, laid there (as it seemeth) for their ease. Speaking at the one End, I did heare it returne the Voice thirteene seuerall times; And I haue heard of others, that it would returne sixteene times: For I was there about three of the Clocke in the Afternoone: And it is best, (as all other Eccho's are) in the Euening. It is manifest, that it is not Eccho's from seuerall places, but a Tossing of the Voice, as a Ball, to and fro; Like to Reflexions in Looking-

glasses; where if you place one Glasse before, and another behinde, you shall see the Glasse behinde with the Image, within the Glasse before; And againe, the Glasse before in that; and diuers such Super-Reflexions, till the species speciei at last die. For it is euery Returne weaker, and more shady. In like manner, the Voice in that Chappell, createth speciem, speciei, and maketh succeeding Super-Reflexions; For it melteth by degrees, and euery Reflexion is weaker than the former: So that, if you speake three Words, it will (perhaps) some three times report you the whole three Words; And then the two latter Words for some times; And then the last Word alone for some times; Still fading, and growing weaker. And whereas in Eccho's of one Returne, it is much to heare foure or fiue Words; In this Eccho of so many Returnes, vpon the matter, you heare aboue twenty Words, for three.

The like Eccho vpon Eccho, but only with two Reports, hath beene obserued to be, if you stand betweene a House, and a Hill, and lure towards the Hill. For the House will giue a Backe-Eccho; One taking it from the other, and the latter the weaker.

There are certaine Letters, that an Eccho will hardly expresse; As S, for one; Especially being Principiall in a Word. I remember well, that when I went to the Eccho at Pont-Charenton, there was an Old Parisian, that tooke it to be the Worke of Spirits, and of good Spirits. For, (said he) call Saten, and the Eccho will not deliuer backe the Deuils name; But will say, Va-'on; Which is as much in French, as Apage, or A-oid. And thereby I did hap to finde, that an Eccho would not returne S, being but a Hissing and an Interiour Sound.

Eccho's are some more sudden, and chop againe, as soone as the Voice is deliuered; As hath beene partly said: Others are more deliberate, that is, giue more Space betweene the Voice, and the Eccho; which is caused by the locall Nearenesse, or Distance: Some will report a longer Traine of Words; And some a shorter: Some more loud (full as loud as the Originall, and sometimes more loud;) And some weaker and fainter.

Where Eccho's come from seuerall Parts, at the same distance, they must needs make (as it were) a Quire of Eccho's, and so make the Report greater, and

euen a Continued Eccho; which you shall finde in some Hills, that stand encompassed, Theater-like.

It doth not yet appeare, that there is Refraction in Sounds, as well as in Species Visible. For I doe not thinke, that if a Sound should passe through diuers Mediums, (as Aire, Cloth, Wood) it would deliuer the Sound, in a differing Place, from that vnto which it is deferred; which is the Proper Effect of Refraction. But Maioration, which is also the Worke of Refraction, appeareth plainly in Sounds, (as hath beene handled at full;) But it is not by Diuersitie of Mediums.

We haue obitèr, for Demonstrations sake, vsed in diuers Instances, the Examples of the Sight, and Things Visible, to illustrate the Nature of Sounds. But wee thinke good now to prosecute that Comparison more fully.

CONSENT OF VISIBLES, and Audibles.

BOth of them spread themselues in Round, and fill a whole Floare or Orbe, vnto certaine Limits: And are carried a great way: And doe languish and lessen by degrees, according to the Distance of the Obiects from the Sensories.

Both of them haue the whole Species in euery small Portion of the Aire, or Medium; So as the Species doe passe through small Crannies, without Confusion: As we see ordinarily in Leuels, as to the Eye; And in Crannies, or Chinks, as to the Sound.

Both of them are of a sudden and easie Generation and Delation; And likewise perish swiftly, and suddenly; As if you remoue the Light; Or touch the Bodies that giue the Sound.

Both of them doe receiue and carry exquisite and accurate Differences; As of Colours, Figures, Motions, Distances, in Visibles; And of Articulate Voices, Tones, Songs, and Quauerings, in Audibles.

Both of them in their Vertue and Working, doe not appeare to emit any Corporall Substance into their Mediums, or the Orbe of their Vertue; Neither againe to raise or stirre any euident locall Motion in their Mediums, as they passe; But only to carrry certaine Spirituall Species; The Perfect Knowledge of the Cause whereof, being hitherto scarcely attained, wee shall search and handle in due place.

Both of them seeme not to generate or produce any other Effect in Nature, but such as appertaineth to their proper Obiects, and Senses, and are otherwise Barren.

But Both of them in their owne proper Action, doe worke three manifest Effects. The First, in that the Stronger Species drawneth the E-sser; As the Light of the Sunne, the light of a Glow-worme; The Report of an Ordnance, the Voice; The Second, in that an Obiect of Surcharge or Excesse destroyeth the Sense; As the Light of the Sunne the Eye, a violent Sound (neare the Eare) the Hearing:

The Third, in that both of them will be reuerberate; As in Mirrours; And in Eccho's.

Neither of them doth destroy or hinder the Species of the other, although they encounter in the same Medium; As Light or Colour hinder not Sound; Nor -contr-.

Both of them affect the Sense in Liuing Creatures, and yeeld Obiects of Pleasure and Dislike: Yet neuerthelesse, the Obiects of them doe also (if it be well obserued) affect and worke vpon dead Things; Namely, such as haue some Conformity with the Organs of the two Senses; As Visibles worke vpon a Looking-glasse, which is like the Pupill of the Eye; And Audibles vpon the Places of Eccho, which resemble, in some sort, the Cauerne and structure of the Eare.

Both of them doe diuersly worke, as they haue their Medium diuersly disposed. So a Trembling Medium (as Smoake) maketh the Obiect seeme to tremble; and a Rising or Falling Medium (as Winds) maketh the Sounds to rise, or fall.

To Both, the Medium, which it the most Prop-out- and Conducible, is Aire; For Glasse or Water, &c. are not comparable.

In Both of them, where the Obiect is Fine and Accurate, it conduceth much to haue the Sense Intentiue, and Erect; In so much as you contract your Eye, when you would see sharply; And erect your Eare, when you would heare attentiuely; which in Beasts that haue Eares moueable, is most manifest.

The Beames of Light, when they are multiplyed, and conglomerate, generate Heat; which is a different Action, from the Action of Sight: And the Multiplication and Conglomeration of Sounds doth generate an extreme Rarefaction of the Aire; which is an Action materiate, differing from the Action of Sound; If it be true (which is anciently reported) that Birds, with great shouts, haue fallen downe.

DISSENTS OF VISIBLES, and Audibles.

THe Species of Visibles soeme to be Emissions of Beames from the Obiect seene; Almost like Odours; saue that they are more Incorporecall: But the Species of Audibles seeme to Participate more with Locall Motion, like Percussions or Impressions made vpon the Aire. So that whereas all Bodies doe seeme to worke in two manners; Either by the Communication of their Natures; Or by the Impressions and Signatures of their Motions; The Diffusion of Species Visible seemeth to participate more of the former Operation; and the Species Audible of the latter.

The Species of Audibles seeme to be carried more manifestly thorow the Aire, than the Species of Visibles: For (I conceiue) that a Contrary strong Wind will not much hinder the Sight of Visibles, as it will doe the Hearing of Sounds.

There is one Difference, aboue all others, betweene Visibles and Audibles, that is the most remarkable; As that wherupon many smaller Differences doe depend: Namely, that Visibles, (except Lights,) are carried in Right Lines; and Audibles in Ar — Lines. Heriee it commeth to passe, that Visibles doe not intermingle; and confound one another, as hath beene said before; But Sounds doe. Hence it commeth, that the Solidity of Bodies doth not much hinder the Sight, so that the Bodies be cleare. and the Pores in a Right Line as in Glasse, Crystall, Diamonds, Water, &c. But a thin Scarse, or Handkerchiefe, though they be Bodies nothing so solide, hinder the Sight: Whereas (contrariwise) these Porous Bodies doe not much hinder the Hearing, but solide Bodies doe almost stop it, or at the least attenuate it. Hence also it commeth, that to the Reflexion of Visibles, small Glasses suffice; but to the Reuerberation of Audibles, are required greater Spaces, as hath likewise beene said before.

Visibles are seene further off, than Sounds are heard; Allowing neuerthelesse the Rate of their Bignesse; For otherwise a great Sound will be heard further off, than a Small Body seene.

Visibles require (generally) some Distance betweene the Obiect, and the Eye, to bee better seene; Whereas in Audibles, the nearer the Approch of the Sound is to the Sense, the better. But in this there may be a double Errour. The one, because to Seeing, there is required Light; And any thing that toucheth the Pupill of the Eye (all ouer,) excludeth the Light. For I haue heard of a Person very credible, (who himselfe was cured of a Cataract in one of his Eyes,) that while the Siluer Needle did worke vpon the Sight of his Eye, to remoue the Filme of the Cataract, he neuer saw any thing more cleare or perfect, than that white Needle: Which (no doubt,) was, because the Needle was lesser than the Pupill of the Eye; and so Cooke not the Light from it. The other Errour may be, for that the Obiect of Sight doth strike vpon the Pupill of the Eye, directly without any interception; wheras the Caue of the Eare doth hold off the Sound a little from the Organ: And so neuerthelesse there is some Distance required in both.

Visibles are s-if-lior carried to the Sense, than Audibles; As appeareth in Thunder and Lightning; Flame and Report of a Peece, — Motion of the Aire in Hewing of Wood. All which haue beene set downe heretofore, but are proper for this Title.

I conceiue also, that the Species of Audibles doe hang longer in the Aire, than those of Visibles: For although euen those of Visibles, doe hang some time, as we see in Rings turned, that shew like Spheres; In Lute-strings fillipped, A Fire-brand caried along, which leaueth a Traine of Light behinde it; and in the Twilight; And the like: Yet I conceiue that Sounds stay longer, because they are carried vp and downe with the Winde: And because of the Distance of the Time, in Ordnance a discharged, and heard twenty Miles off.

In Visibles, there are not sound Obiects so odious and in grate to the Sense, as in Audibles. For foule Sights doe rather displease, in that they exci-e the Memory of foule Things, than in the immediate Obiects. And therefore in —— — those foule Sights doe not much offend; But in Audibles, the Grating of a Saw, when it is sharpned, doth offend so much, as it Fen — the Teeth on Edge. And any of the harsh Discords in Musicke, the Eare doth straightwaies refuse.

In Visibles, after great Light, if you come suddenly into the Darke; Or contrariwise, out of the Darke into a Glaring light, the Eye is dazled for a time; and the Sight confused; not whether any such Effect be after great Sounds, or after a deepe Silence, may be better enquired. It is an old Tradiribit, th — those that dwell heare the C — n — of Nil — , are strucken deafe, But we finde no such effect, in Canno — ers, not Millers, not those that dwell vpon Bridges.

It seemeth that the Impression of Colour is so weake, as it worketh not but by a Cone of Direct Beames, or Right Lines; wherof the Basis is in the Obiect, and the Verticall Point in the Eye; So as there is a Corra-iation and Co — un —— of Beames; And those Beames so sent forth, yet are not of any force to bege-the like borrowed or second Beames, except it be by Reflexion, wherof we speake not. For the Beames passe, and giue little Ta —— — to that — te, which is Adiacent; which if they did, we should see Colours out of a Right line. But as this is in Colours, so otherwise it is in the Body of Light. For when there is a Skreene between the Candle and the Eye, yet the Light passeth to the Paper wheron One writeth; So that the Light is seene, where the Body of the Flame is not seene; And where any Colour (if it were placed where the Body of the Blame is) would not be seene. I iudge that Sound is of this Latter Nature: For when two are placed on both sides of a Wall, and the Voice is heard, I iudge it is not onely the Originall Sound, which passeth in an Arebed Line; But the Sound, which passeth aboue the Wall in a Right Line, begetteth the like Motion round about it, as the first did, though more weake.

All Concords and Discords of Musicke, are, (no doubt,) Sympathies, and Antipathies of Sounds. And so (likewise) in that Musicke, which we call Broken Musicke, or Consort Musicke; Some Consorts of Instruments are sweeter than others; (A Thing not suffciently yet obserued:) As the Irish Harpe, and Base Viall agree well: The Recorder and Stringed Musick agree well: Organs and the Voice agree well; &c. But the Virginalls and the Lute; Or the Welch-Harpe, and, Irish-Harpe; Or the Voice and Pipes alone, agree not so well; But for the Melieration of Musicke, there is yet much lest (in this Point of Exquisite Consorts) to try and ehquire.

There is a Common Obseruation, that if a Lute, or Viall, be layed vpon the Backe, with a small Straw vpon one of the Strings; And another Lute or Viall be laid by it; And in the other Lute or Viall, the Vnison to that String be strucken; it will make the String, moue; Which will appeare both to the Eye, and by the Strawes Falling off. The like will be, if the Diapason or Eight to that String be strucken, either in the same Lute, or Viall, or in others lying by; But in one of these there is any Report of Sound, that can be discerned, but onely Motion.

It was deuised, that a Viall should haue a Lay of Wire Strings below, as close to the Belly, as a Lute; And then the Strings of Guts mounted vpon a Bridge, as in Ordinary Vialls; To the end, that by this means, the vpper Strings strucken, should make the lower resound by Sympathy, and so make the Musicke the better; Which, if it be to purpose, then Sympathy worketh, as well by Report of Sound, as by Motion. But this deuice I conceiue to be of no vse; because the vpper Strings, which are stopped in great variety, cannot maintaine a Diapason or Vnison, with the Lower, which are neuer stopped, But if it should be of vse at all; it must be in Instruments which haue no Stops; as Virginalls, and Harpes; wherin triall may be made of two Rowes of Strings, distant the one from the other.

The Experiment of Sympathy may be transferred (perhaps) from Instruments of Strings, to other Instruments of Sound. As to try if there were in one Steeple, two Bells of Vnison, whether the striking of the one would moue the other, more than if it were another Accord: And so in pipes, (if they be of equall Bore, and Sound,) whether a little Straw or Feather would moue in the one Pipe, when the other is blowne at an Vnison.

It seemeth, both in Eare, and Eye, the Instrument of Sense hath a Sympathy or Similitude with that which giueth the Reflexion; (As hath beene touched befor.) For as the Sight of the Eye is like a Crystall, or Glasse, or Water; So is the Eare a sinuous Caue, with a hard Bone, to stop and reuerberate the Sound; Which is like to the Places that report Eccho's.

When a Man Yawneth, he cannot Heare so well. The Cause is, for that the Membrane of the Eare is extended; And so rather casteth off the Sound, than

draweth it to.

We Heare better when we hold our Breath, than contrary; In so much as in all Listening to attaine a Sound a farre off, Men hold their Breath. The Cause is, For that in all Expiration, the Motion is Outwards; And therefore, rather driueth away the voice, than draweth it: And besides we see, that in all Labour to doe things with any strength, we hold the Breath: And listening after any Sound, that is heard with difficulty, is a kinde of Labour.

Let it be tryed, for the Helpe of the Hearing, (and I conceiue it likely to succeed,) to make an Instrument like a Tunnell; The narrow Part whereof may be of the Bignesse of the Hole of the Eare; And the Broader End much larger, like a Bell at the Skirts; And the length halfe a foot, or more. And let the narrow End of it be set close to the Eare: And marke whether any Sound, abroad in the open Aire, will not be heard distinctly, from further distance; than without that Instrument; being (as it were) an Eare-Spectacle. And I haue heard there is in Spaine, an Instrument in vse to be set to the Eare, that helpeth somewhat those that are Thicke of Hearing.

If the Mouth be shut close, neuerthelesse there is yeelded by the Roofe of the Mouth, a Murmur, Such as is vsed by dumbe Men: But if the Nostrills be likewise stopped, on such Murmur can be made; Except it be in the Bottome of the Pallate towards the Throat. Whereby it appeareth manifestly, that a Sound in the Mouth, except such as aforesaid, if the Mouth be stopped, passeth from the Pallate, thorow the Nostrills.

The Repercussion of Sounds, (which we call Eccho,) is a great Argument of the Spirituall Essence of Sounds. For if it were Corporeall,) the Repercussion should be created in the same maner, and by like Instruments, with the Originall Sound-. But we see what a Number of Exquisite Instruments must concurre in Speaking of Words, where of there is no such Matter in the Returning of them; But onely a plaine Stop, and Repercussion.

The Exquisite Differences of Articulate Sounds, carried along in the Aire, shew that they cannot be Signalures or Impressions in the Aire, as hath beene well refuted by the Ancients. For it is true, that Seales make excellent

Impressions: And so it may be thought of Sounds in their first Generation: But then the Delation and Continuance of them without any new Sealing, shew apparently they cannot be Impressions.

All Sounds are suddenly made, and doe suddenly perish; But neither that, nor the Exquisite Differences of them, is Matter of so great Admiration: For the —— e — gs, and Warblings to Lutes, and Pipes, are as swift; And the Tongue, (which is no very fine Instrument,) doth in Speech, make no fewer Motions, than there be Letters in all the Words, which are vttered. But that Sounds should not onely be so speedily generated, but carried so farre euery way, in such a momentany time, deserueth more Admiration. As for Example; If a Man stand in the middle of a Field, and speake aloud, he shall be heard a Furlong in round; And that shall be in Articulate Sounds; And those shall be Entire in euery little Portion of the Aire; And this shall be done in the Space of lesse than a Minute.

The Sudden Generation and Perishing of Sounds, must be one of these two Waies. Either that the Aire suffereth some Force by Sound, and then restoreth it selfe; As Water doth; Which being diuided, maketh manny Circles, till it restore it selfe to the naturall Consistence: Or otherwise, that the Aire doth willingly imbibe the Sound as gratefull, but cannot maintaine it; For that the Aire hath (as it should seeme) a secret and hidden Appetite of Receiuing the Sound at the first; But then other Grosse and more Materiate Qualities of the Aire straightwaies suffocate it; Like vnto Flame, which is generated with Alacrity, but straight quenched by the Enmity of the Aire, or other Ambient Bodies.

There be these Differences (in generall) by which Sounds are diuided; 1. Musicall, Immusicall; 2. Treble, Base; 3. Flat, Sharpe; 4. Soft, Loud; 5. Exteriour, Interiour, 6. Cleane, Harsb or Purling; 7. Articulate, Inarticulate.

We haue laboured (as may appeare,) in this Inquisition of Sounds, diligently; Both because Sound is one of the most Hidden Portions of Nature, (as we said in the beginning:) And because it is a Vertue which may be called Incorporeall, and Immateriate; wherof there be in Nature but few. Besides, we were willing, (now in these our first Centuries,) to make a Patterne or President of an Exact Inquisition; And we shall doe the like hereafter in some other Subiects which

require it. For we desire that Men should learne and perceiue, how seuere a Thing the true Inquisition of Nature is; And should accustome themselues, by the light of Particulars, to enlarge their Mindes, to the Amplitude of the World; And not reduce the World to the Narrownesse of their Mindes.

Metalls giue Orlens and Fine Colours in Dissolutions; As Gold giueth an excellent Yellow; Quick-Siluer an excellent Greene; Tinne giueth an excellent Azure: Likewise in their Putrefactions, or Rusts; As Vermilion, Verdegrease, Bise, Cirrus, &c. And likewise in their vitrifications. The Cause is, for that by their Strength of Body, they are able to endure the Fire, or Strong Waters, and to be put into an Equall Posture; And againe to retaine Part of their principall Spirit; Which two Things, (Equall Posture, and Quicke Spirits) are required chiefely, to make Colours lightsome.

It conduceth vnto Long Life, and to the more Placide Motion of the Spirits, which thereby doe lesse prey and consume the Iuyce of the Body; Either that Mens Actions bee free and voluntary; That nothing bee done Inuitâ Mineruâ, but Secundum Genium: Or on the other side, that the Actions of Men bee full of Regulation, and Commands within themselues: For then the Victory and Performing of the Command, giueth a good Disposition to the Spirits; Especially if there bee a Proceeding from Degree to Degree; For then the Sense of Victory is the greater. An example of the former of these, is in a Countrey life; And of the latter, in Monkes and Philosophers, and such as doe continually enioyne themselues.

It is certaine, that in all Bodies, there is an Appetite of Vnion, and Euitation of Solution of Continuity: And of this Appetite there bee many Degrees; But the most Remarkable, and fit to bee distinguished, are three. The first in Liquours; The second in Hard Bodies: And the third in Bodies Cleaning or Tenacious. In Liquours, this Appetite is weake: We see in Liquours, the Thredding of them in Stillicides, (as hath beene said;) The Falling of them in Round Drops, (which is the forme of Vnion;) And the Staying of them, for a little time, in Bubbles and Froth. In the second Degree or Kinde, this Appetite is strong; As in Iron, in Stone, in Wood, &c. In the third, this Appetite is in a Medium betweene the

other two: For such Bodies doe partly follow the Touch of another Body; And partly sticke and continue to themselues; And therefore they roape, and draw themselues in Threds; As wee see in Pitch, Glew, Birdlime, &c. But note, that all Solide Bodies are Cleaning, more or lesse: And that they loue better the Touch of somewhat that is Tangible, than of Aire, For Water, in small quantity, cleaueth to any Thing that is Solide; And so would Metall too, if the weight drew it not off. And therefore Gold Foliate, or any Metall Foliate, cleaueth: But those Bodies which are noted to bee Clammy, and Cleauing, are such, as haue a more indifferent Appetite (at once,) to follow another Body; And to hold to Themselues. And therefore they are commonly Bodies ill mixed; And which take more pleasure in a Forraine Body, than in preseruing their owne Consistence; And which haue little predominance in Drought, or Moisture.

Time, and Heat, are Fellowes in many Effects.Heat drieth Bodies, that doe easily expire; As Parchment, Leaues, Roots, Clay, &c. And, so doth Time or Age arefie; As in the same Bodies, &c. Heat dissolueth and melteth Bodies, that keepe in their Spirits; As in diuers Liquefactions; And so doth Time, in some Bodies of a softer Consistence: As a manifest in Honey, which by Age waxeth more liquid: And the like in Sugar; And so in old Oyle, which is euer more cleare, and more hot in Medicinable vse. Heat causeth the Spirits to search some Issue out of the Body; As in the Volatility of Metalls; And so doth Time; As in the Rust of Metalls. But generally Heat doththat in small time, which Age doth in long.

Some Things which passe the Fire are softest at first, and by Time grow hard; As the Crumme of Bread. Some are harder when they come from the Fire, and afterwards giue againe, and grow soft, as the Crust of Bread, Bisket, Sweet Meats, Salt, &c. The Cause is, for that in those things which waxe Hard with Time, the Worke of the Fire is a Kinde of Melting: And in those that waxe Soft with Time, (contrariwise,) the woke of the Fire is a Kinde of Baking; And whatsoeuer the Fire baketh, Time doth in some degree dissolue.

Motions passe from one Man to another, not so much by Exciting Imagination; as by Inuitation; Especially if there be an Aptnesse or Inclination

before. Therefore Gaping, or Yawning, and Stretching doe passe from Man to Man; For that that causeth Gaping and Stretching is, when the Spirits are a little Heauy, by any Vapour, or the like. For then they striue, (as it were,) to wring out, and expell that which loadeth them. So Men drowzy, and desirous to sleepe; Or before the Fit of an Ague; doe vse to Yawne and Stretch; And doe likewise yeeld a Voice or Sound, which is an Interiection of Expulsion: So that if another be apt and prepared to doe the like, he followeth by the Sight of another. So the Laughing of another maketh to Laugh.

There be some knowne Diseases that are Infectious; And Others that are not. Those that are Infectious, are; First, such as are chiefly in the Spirits, and not so much in the Humours; And therefore passe easily from Body to Body: Such are Pestilences, Lippitudes; and such like. Secondly, such as Taint the Breath; Which wee see passeth manifestly from Man to Man; And not inuisibly, as the Affects of the Spirits doe: Such are Consumptions of the Lungs, &c. Thirdly such as come forth to the Skinne; And therefore taint the Aire, or the BodyAdiacent; Especially if they consist in an Vnctuous Substance, no apt to dissipate; Such are Scabs, and Lepronsie. Fourthly, such as are meerely in the Humours, and not in the Spirits, Breath, or Exhalations: And therefore they neuer infect, but by Touch onely; and such a Touch also, as commeth within the Epidermis; As the Venome of the French Poxe, And the Biting of a Mad Dog.

Most Powders grow, more Close and Coherent by Mixture of Water, than by Mixture of Oyle, though Oyle be the thicker Body; As Meale; &c. The Reason is the Congruity of Bodies; which if it be more, maketh a Perfecter Imbibition, and Incorporation; Which in most Powders is more betweene Them and Water, than betweene Them and Oyle: But Printers Colours ground, and Ashes, doe better incorporate with Oyle.

Much Motion and Exercise is good for some Bodies; And Sitting, and lesse Motion for Others. If the Body be Hot, and Void of Superflous Moistures, too much Motion hurteth: And it is an Errour in Physitians, to call too much vpon Exercise. Likewise Men ought to beware, that they vse not Exercise, and a Spare Diet both: But if much Exercise, then a Plentifull Diet, And if Sp-ring

Diet, then little Exercise. The Benefits that come of Exercise are, First, that it sendeth Nourishment into the Parts more forcibly. Secondly, that it helpeth to Exceme by Sweat, and so maketh the Parts assimilate the more perfectly. Thirdly, that it maketh the Substance of the Body more Solide and Compact; And so lesse apt to be Consumed and Depredated by the Spirits. The Euills that come of Exercise, are: First, that it maketh the Spirits more Hot and Predatory. Secondly, that it doth absorbe likewise, and attenuate too much the Moisture of the Body. Thirdly, that it maketh too great —— sion, (especially if it be violent,) of the Inward Parts; which delight more in Rest. But generally Exercise, if it be much, is no Friend to Prolongation of Life; Which is one Cause, why Women liue longer than Men, because they stirre lesse.

Some Food we may vse long, and much, without Glatting; As Bread, Flesh that is not fat, or rancke, &c. Some other, (though pleasant,) Glutteth sooner; As Sweet Meats, Fat Meats, &c. The Cause is, for that Appetite consisteth in the Emptinesse of Mouth of the Stomacke; Or possessing it with somewhat that is Astringent; and therfore Cold and Dry. But things that are Sweet and Fat, are more Filling: And do swimme and hang more about the Mouth of the Stomacke; And goe not downe so speedily: And againe turne sooner to Choler, which is hot, and euer abateth the Appetite. Wee see also, that another Cause of Society, is an Ouer-custome; and of Appetite is Nouelty: And therefore Meats, if the same be continually taken, induce Loathing. To giue the Reason of the Distast of Society, and of the Pleasure in Nouelty; and to distinguish not onely in Meats and Drinkes, but also in Motions, Loues, Company, Delights, Studies, what they be that Custome maketh more gratefull; And what more tedious; were a large Field. But for Meats, the Cause is Attraction, which is quicker, and more excited towards that which is new, than towards that whereof there remaineth a Rellish by former vse. And (generally) it is a Rule, that whatsoeuer is somewhat Ingrate at first, is made Gratefull by Custome; But whatsoeuer is too Pleasing at first, groweth quickly to satiate.

IV. Century.

ACCELERATION of Time, in Works of Nature, may well be esteemed Inter Magnalia Naturae. And euen in Diuine Miracles, Accelerating of the Time, is next to the Creating of the Matter. We will now therfore proceed to the Enquiry of it: And for Acceleration of Germination, we will referre it ouer, vnto to the place, where we shall handle the Subiect of Plants, generally; And will now begin with other Accelerations.

Liquours are (many of them,) at the first, thicke and troubled; As Must, Wort, Iuyces of Fruits, or Hearbs expressed, &c. And by Time they settle, and Clarifie. But to make them cleare, before the Time, is a great Worke; For it is a Spurre to Nature, and putteth her out of her pace; And besides it is of good vse, for making Drinkes, and Sances, Potable, and Seruiceable, speedily; But to know the —— — of Accelerating Clarification, we must first know the Causes of Clarification. The first Cause is, by the Separation of the Gresser Parts of the Liquour-, from the Finer. The second, by the Equall Distribution of the Spirits of the Liquour, with the 8 letters Parts; For that —— representeth Bodies Cleare and Vntroubled. The third, by the Resining the Spirit it selfe, which therby giueth to the Liquour more Splendour, and more Lustre.

First, for Separation; It is wrought by Weight; As in the ordinary Residence or Settlement of Liquours: By Heat: By Motion: By Precipitation, or Sublimation; (That is, a Calling of the seuerall Parts, either vp, or downe, which is a kinde of Attraction:) By Adhesion; As when a Body more Viscous is mingled and agitated with the Liquour: which Viscous Body (afterwards seuered) draweth with it the grosser Parts of the Liquour; And Lastly, By Percolation or Passage.

Secondly, for the Euen Distribution of the Spirits; It is wrought By Gentle Heat; And By Agitation or Motion; (For of Time we speake not, because it is that, we would anticipate & represent:) And it is wrought also, By Mixture of

some other Body, which hath a vertue to open the Liquour, and to make the Spirits the better passe thorow.

Thirdly, for the Refining of the Spirit, it is wrought likewise By Heat; By Motion; And by Mixture of some Body which hath Vertue to attenuate. So therefore (hauing shewen the Causes) for the Accelerating of Clarification, in generall, and the Enducing of it; take these Instances, and Trialls.

It is in common Practise, to draw Wine, or Beere, from the Lees, (which we call Racking;) wherby it will Clarifie much the sooner: For the Lees, though they keepe the Drinke in Heart, and make it lasting; yet withall they cast vp some Spissitude: And this Instance is to be referred to Separation.

On the other side, it were good to try, what the Adding to the Liquour more Lees than his owne will worke; For thought the Lees doe make the Liquour turbide, yet they refine the Spirits. Take therfore a Vessell of New Beere; And take another Vessell of New Beere, and Rack the one Vessell from the Lees, and powre the Lees of the Racked Vessell into the vnracked Vessell, and see the Effect: This Instance is referred to the Refining of the Spirits.

Take New Beere, and put in some Quantitie of Stale Beere into it, and see whether it will not accelerate the Clarification, by Opening the Body of the Beere, and Cutting the Grosser Parts, wherby they may fall downe into Lees. And this Instance againe is referred to Separation.

The longer Malt, or Herbs, or the like, are Infused in Liquour, the more thicke and troubled the Liquour is; But the longer they be decocted in the Liquour, the clearer it is. The Reason is plaine, because in infusion, the longer it is, the greater is the Part of the Grosse Body, that goeth into the Liquour: But in Decoction, though more goeth forth, yet it either purgeth at the Top, or fettleth at the Bottome. And therfore the most Exact Way to Clarifie is; First to Infuse, and then to take off the Liquour, and Decoct it; as they doe in Beere, which hath Malt first Infused in the Liquour, and is afterwards boiled with the Hop. This also is referred to Separation.

Take Hot Embers, and put them about a Bottle filled with New Beere, almost to the very Neck: Let the Bottle be well stopped, lest it flie out: And continue it,

renewing the Embers euery day, by the space of Ten Dayes; and then compare it with another Bottle of the same Beere set-by. Take also Lime both Quenched, and Vnquenched, and set the Bottles in them, vt Supra. This Instance is referred, both to the Euen Distribution, and also to the Refining of the Spirits by Heat.

Take Bottles, and Swing them; Or Carry them in a Wheels-Barrow, vpon Rough Ground; twice in a day: But then you may not fill the Bottles full, but leaue some Aire; For if the Liquour come close to the Stopple, it cannot play, nor flower: And when you haue shaken them well, either way, poure the Drinke into another Bottle, stopped close, after the vsuall manner; For if it stay with much Aire in it, the Drinke will pall; neither will it settle so perfectly in all the Parts. Let it stand sorce 24. houres: Then take it, and put it againe into a Bottle with Aire, vt supra: And thence into a Bottle Stopped, vt supra: And so repeat the same Operation for seuen dayes. Note that in the Emptying of one Bottle into another, you must doe it swiftly, lest the Drinke pall. It were good also, to trie it in a Bottle with a little Aire below the Neck, without Emptying. This Instance is referred to the Euen Distribution and Refining of the Spirits by Motion.

As for Percolation, Inward, and Outward, (which belongeth to Separation,) Triall would be made, of Clarifying by Adhesion, with Milks put into New Beere, and stirred with it: For it may be that the Grossar Part of the Beere will cleave to the Milke: The Doubt is, whether the Milke will feuer - ell againe; Which is soone tried. And it is vsuall in Clarifying Ippoerasse to put in Milke; Which after seuereth and carrieth with it the Grosser Parts of the Ippoerasse, as hath beene said elsewhere. Also for the better Clarification by Persolation, when they run New Beere, they vse to let it passe through a Strainer; And it is like the finer the Strainer is, the clearer it will be.

The Accelerating of Maturation Wee will now enquire of. And of Maturation it selfe. It is of three Natures. The Maturation of Fruits. The Maturation of Drinkes: And the Maturation of Impostumes, and Vlcers. This last we referre to another Place, where wee shall handle Experiments Medicinall. There be also other Maturations, as of Metalls, &c. whereof we will speake as Occasion

serueth. But we will begin with that of Drinkes, because it hath such a Affinitie with the Clarification of Liquours.

For the Maturation of Drinkes, it is wrought by the congregation of the Spirits together, whereby they digest more perfectly the Grosser Parts: And it is effected partly, by the same meanes, that Clarification is, (wherof wee spake before;) But then more, that an Extreme Clarification doth spread the Spirits so Smooth, as they become Dull, and the Drinke dead, which ought to haue a little Flouring. And therefore all your Cleare Amber Drinke is flat.

We see the Degrees of Maturation of Drinkes; In Must; In Wine, as it is drunke; And in Vinegar. Whereof Must hath not the Spirits well Congregated; Wine hath them well vnited; so as they make the Parts somewhat more Oylie: Vinegar hath them Congregated, but more Ieiune, and in smaller Quantitie; The greatest and finest Spirit and Part being exhaled: For we see Vinegar is made by setting the Vessell of Wine against the hot Sun: And therefore Vinegar will not burne; For that much of the Finer Parts is Exhaled.

The Refreshing and Quickning of Drinke Palled, or Dead, is by Enforcing the Motion of the Spirit: So wee see that Open Weather relaxeth the Spirit, and maketh it more liuely in Motion. Wee see also Bottelling of Beere, or Ale, while it is New, and full of Spirit, (so that it spirteth when the Stopple is taken forth) maketh the Drinke more quicke and windie. A Pan of Coales in the Cellar doth likewise good, and maketh the Drinke worke againe. New Drinke, put to Drinke that is Dead, prouoketh it to worke againe; Nay, which is more, (as some affirme,) A Brewing of New Beere, set by Old Beere, maketh it worke againe. It were good also to Enforce the Spirits by some Mixtures, that may excite and quicken them; As by Putting into the Bottles, Nitre, Chalke, Lime, &c. We see Creame is Matured, and made to rise more speedily, by Putting in Cold Water; which, as it seemeth, getteth downe the Whey.

It is tried, that the Burying of Bottles of Drinke well stopped, either in drie Earth, a good depth; Or in the Bottome of a Well within Water; And best of all the Hanging of them in a deepe Well somewhat aboue the Water, for some forthnights space, is an Excellent Meanes of making Drink fresh, and quicke: for

the Cold doth not cause my Exhaling of the Spirits at all; As Heat doth, though it rarifieth the rest that remaine: But Cold maketh the Spirits vigorous, and irritateth them, whereby they Incorporate the Parts of the Liquour perfectly.

As for the Maturation of Fruits; It is wrought by the Calling forth of the Spirits of the Body outward, and so Spreading them more Smoothly: And likewise by Digesting, in some degree, the Grosser Parts: And this is Effected, by Heat; Motion; Attraction; And by a Rudiment of Putrefaction: For the Inception of Putrefaction hath in it a Maturation.

There were taken Apples, and laid in Straw; In Hay; In Flower; In Chalke; In Lime; Couered ouer with Onions; Couered ouer with Crabs; Closed vp in Wax; Shut in a Box; &c. There was also an Apple hanged vp in Smoake: Of all which the Experiments sorted in this Manner.

After a Moneths Space, the Apple Enclosed in Wax, was as Greene and Fresh as at the first Putting in, and the Kernells continued White. The Cause is, for that all Exclusion of Open Aire, (which is euer Predatory) maintaineth the Body in his first Freshnesse, and Moisture: But the Inconuenience is, that it tasteth a little of the Wax: Which, I suppose, in a Pomgranate, or some such thick-coated Fruit, it would not doe.

The Apple Hanged in the Smoake, turned like an Old Mellow Apple, Wrinkled, Drle, Soft, Sweet Yellow within. The Cause is, for that such a degree of Heat, which doth neither Melt, nor Scorch, (For we see that in a greater Heat, a Roast Apple Softneth and Melteth; And Pigs feet, made of Quarters of Wardens, scorch and haue a Skin of Cole) doth Mellow, and not Adure: The Smoake also maketh the Apple (as it were) sprinkled with Soot, which helpeth to Mature. We see than in Drying of Peares, and Prunes, in the Ouen, and Remouing of them often as they begin to Sweat, there is a like Operation; But that is with a farre more Intense degree of Heat.

The Apples couered in the Lime and Ashes, were well Matured; As appeared both in their Yellownesse, and Sweetnesse. The Cause is, for that that Degree of Heat which is in Lime, and Ashes, (being a Smoothering Heat) is of all the rest most Proper; for it doth neither Liquefie, nor Atefie; And that is true Maturation,

N — that the Taste of those Apples was good; And therefore it is the Experiment fittest for Vse.

The Apples, Conered with Crabs, and Onions, were likewise well Matured. The Cause is, not any, Heat; But for that the Crab and the Onions draw forth the —— of the Apple, and spread them equally thorow out the — , which — away Hatdnesse —— — see f — one Apple — ath against another. And therefore in making of Cider, they turne the Apples first vpon a heape. So one Cluster of Grapes, that toucheth another —— it groweth ripeneth faster; —— —— —— —— —— —

The Apple —— —— and the S —— —— apparently, though —— —— — in the —— — more. The Cause is, for that the Hay and Straw haue a very low degree of Heat, but yet Close and Smoothering, and which drieth nor.

The Apple in the Close Box, was ripened also: The Cause is, for that all Alfe, kept close; hath a degree of Warmth. As we see in W —— — Plus-, &c.

Note that all these were Compared with another Apple, of the same kinds, that lay of it Selfe: And in Comparison of that, were more Sweet, and more Yellow, and so appeared to be most Ripe.

Taken Apple, or P — , or other like Fruit and Row — it vpon a Table hard: We see in Common Experience, that the doth Soften and Sweeten the Fruit presently▪ Which is Nothing but the S —— —— — of the Spirits into the Parts; For the —— D —— of the Spirits maketh the Ha — ishnesse: But this Hard Row — is betweene Concoction, and a Simple Maturation; Therefore, if you should Rowle them but gently, perhaps twice a day; And some seuen dayes▪ it is like they would mature more finely, and like vnto the Naturall Maturation.

Take an Apple, and cut out a Peece of the Top, and couer it, to see whether that Solution of Continuitie will not hasten a Maturation▪ We see that where a Waspe, or a Flie, or a Worme hath bitten, in a Grape, or any Fruit, it will sweeten hastily.

Take an Apple, &c. and pricke it with a Prinne full of Holes, not deepe, and smeare it a little with Sacke, or Cinnamon Water, or Spirit of Wine, euery day

for ten dayes, to see if the Virtuall Heat of the Wine, or Strong Waters, will not Mature it.

In these Trialls also, as was vsed in the first, set another of the same Fruits by, to Compare them: And trie them, by their Yellownesse, and by their Sweetnesse.

The World hath beene much abused by the Opinion of Making of Gold: The Worke it selfe I iudge to be possible; But the Meanes (hitherto propounded) to effect it, are, in the Practise, full of Errour and Imposture; And in the Theory, full of vnsound Imaginations. For to say, that Nature hath an Intention to make all Metals Gold; And that, if she were deliuered from Impediments, she would performe her owne Worke; And that, if the Crudities, Impurities, and Leprosities of Metals were cured, they would become Gold; And that a little Quantitie of the Medicine, in the Worke of Proiection, will turne a Sea of the Baser Metall into Gold, by Multiplying: All these are but dreames: And so are many other Grounds of Alchymy. And to helpe the Matter, the Alchymists call in likewise many Vanities, out of Astrologie; Naturall Magicke; Superstitious Interpretations of Scriptures; Auricular Traditions; Faigned Testimonies of Ancient Authors; And the like. It is true, on the other side, they haue brought to light not a few profitable Experiments, and thereby made the World some amends. But wee, when wee shall come to handle the Version and Transmutation of Bodies; And the Experiments concerning Metalls, and Mineralls; will lay open the true Wayes and Passages of Nature, which may leade to this great Effect. And wee commend the wit of the Chineses, who despaire of Making of Gold, but are Mad vpon the Making of Siluer: For certaine it is, that it is more difficult to make Gold, (which is the most Ponderous and Materiate amongst Metalls) of other Metalls, lesse Ponderous, and lesse Materiate; than (viâ versâ) to make Siluer of Lead, or Quick-Siluer; Both which are more Ponderous than Siluer; So that they need rather a further Degree of Fixation, than any Condensation. In the meanetime, by Occasion of Handling the Axiomes touching Maturation, we will direct a Triall touching the Maturing of Metalls, and therby Turning some of them into Gold; For we conceiue indeed, that a perfect good Concoction, or Disgestion, or Maturation of some Metalls,

will produce Gold. And here we call to minde, that wee knew a Dutch-man, that had wrought himselfe into the beleese of a great Person, by vndertaking that he could make Gold: Whose discourse was, that Gold might be made; But that the Alchymists Ouer-fired the Worke: For (he said) the Making of Gold did require a very temperate Heat, as being in Nature a Subterrany worke, where little Heat commeth; But yet more to the Making of Gold, than of any other Metall; And therefore, that he would doe it with a great Lampe, that should carry a Temperate and Equall Heat: And that it was the Worke of many Moneths. The Deuice of the Lampe was folly; But the Ouer-firing now vsed; And the Equall Heat to be required; And the Making it a Worke of some good Time; are no ill Discourses.

We resort therefore to our Axiomes of Maturation, in Effect touched before. The First is, that there be vsed a Temporate Heat; For they are euer Temperate Heats that Disgest, and Mature: Wherein we meane Temperate, according to the Nature of the Subiect; For that may be Temperate to Fruits, and Liquours, which will not worke at all vpon Metalls. The Second is, that the Spirit of the Metall be quickened, and the Tangible Parts opened: For without those two Operations, the Spirit of the Metall, wrought vpon, will not be able to disgest the Parts. The Third is, that the Spirits doe spread themselues Euen, and moue not Subsultorily; For that will make the Parts Close, and Pliant. And this requireth a Heat, that doth not rise and fall, but continue as Equall as may be. The Fourth is, that no Part of the Spirit be emitted, but detained: For if there be Emission of Spirit, the Body of the Metall will be Hard, and Churlish. And this will be performed, partly by the Temper of the Fire; And partly by the closenesse of the Vessell. The Fifth is, that there be Choice made of the likeliest and best Prepared Metall, for the Version: For that will facilitate the Worke. The Sixth is, that you giue Time enough for the Worke: Not to prolong Hopes (as the Alchymists doe;) but indeed to giue Nature a conuenient Space to worke in. These Principles are most certaine, and true; Wee will now deriue a direction of Triall out of them; Which may (perhaps) by further Meditation, be improued.

Let there be a Small Furnace made, of a Temperate Heat; Let the Heat be such, as may keepe the Metall perpetually Moulten, and no more; For that aboue

all importeth to the Worke. For the Materiall, take Siluer, which is the Metall that in Nature Symbolizeth most with Gold; Put in also, with the Siluer, a Tenth Part of Quick-siluer, and a Twelfth Part of Nitre, by weight; Both these to quicken and open the Body of the Metall: And so let the Worke be continued by the Space of Six Moneths, at the least. I wish also, that there be, at some times, an Iniection of some Oyled Substance; Such as they vse in the Recouering of Gold, which by Vexing with Separations hath beene made Churlish: And this is, to lay the Parts more Close and Smooth, which is the Maine Worke. For Gold (as we see) is the Closest (and therefore the Heauiest) of Metalls: And is likewise the most Flexible, and Tensible. Note, that to thinke to make Gold of Quick-Siluer, because it is the heauiest, is a Thing not to be hoped; For Quick-Siluer will not endure the Mannage of the Fire. Next to Siluer, I thinke Copper were fittest to bee the Materiall.

Gold hath these Natures: Greatnesse of Weight; Closenesse of Parts; Fixation; pliant-esse, or Softnesse; Immunity from Rust; Colour or Tincture of Yellow. Therfore the Sure Way, (though most about,) to make Gold, is to know the Causes of the Seuerall Natures before rehearsed, and the Axiomes concerning the same. For if a Man can make a Metall, that hath all these Properties, Let Men dispute, whether it be Gold, or no?

The Enducing and Accelerating of Putrefaction, is a Subiect of a very Vniuersall Enquiry: For Corruption is a Reciprocall to Generation. And they Two, are as Natures two Termes or Bundaries; And the Guides to Life and Death, Putrefaction is the Worke of the Spirits of Bodies, which euer are Vnquiet to Get forth, and Congregate with the Aire, and to onioy the Sunbeames: The Getting forth, or Spreading of the Spirits, (which is a Degree of Getting forth,) hath fine Differing Operations. If the Spirits be detained within the Body, and moue more violently, there followeth Colliquation; As in Metalls, &c. If more Mildely, there followeth Disgestion, or Maturation, As in Drinkes, and Fruits. If the Spirits be not meerely Detained, but Protrude a little, and that Motion be Confused, and Inordinate, there followeth Putrefaction; Which euer dissolueth the Consistence of the Body into much Inequality; As in Flesh, Rotten

Fruits, Shining Wood, &c. And also in the Rust of Metalls. But if that Motion be in a certaine Order, there followeth Viuification, and Figuration; As both in Liuing Creatures bred of Putrefaction, and in Liuing Creatures Perfect. But if the Spirits issue out of the Body, there followeth Deficcation, Induration, Consumption, &c. As in Bricke, Euaporation of Bodies Liquid, &c.

The Meanes to Enduce and Accelerate Putrefaction, are; First by Adding some Crude pr Watry Moisture; As in Wetting of any Flesh, Fruit, Wood, with Water, &c. For contrariwise Vnctuous and Oyly Substances preserue.

The Second is by Inuitation or Excitation; As when a Rotten Apple lyeth close to another Apple that is Sound; Or when Dung (which is a substance, already Putrified) is added to other Bodies. And this is also notably seene in Church-yards, where they bury much; Where the Earth will consume the Corps, in farre shorter time, than other Earth will.

The Third is, by Closenesse, and Stopping, which detaineth the Spirits, in Prison, more than they would; And thereby irritateth them to seeke Issue; As in Corne, and Cloaths, which waxe Musty; and therefore Open Aire (which they call Aer perstabilis) doth preserue: And this doth appeare more Euidently in Agnes, which come (most of them,) of Obstructions, and Penning the Humours, which thereupon Putrisie.

The Fourth is, by Solution of Continuity; As we see an Apple will rot sooner, if it be Cut or Pierced; And so will Wood, &c. And so the Flesh of Creatures aliue, where they haue receiued any Wound.

The Fifth is, either by the Exhaling, or by the Driuing back of the Principall Spirits, which preserue the Consistence of the Body; So that when their Gouernment is Dissolued, euery Part returneth to his Nature, or Homogeny. And this appeareth in Vrine, and Blond, when they coole, and thereby breake; It appeareth also in the Gangrene, or Mortification of Flesh, either by Opiates, or by Intense Colds. I conceiue also the same Effect is in Pestilences, for that the Malignity of the Infecting Vapour, daunceth the Principall Spirits, and maketh them fly, and leaue their Regiment; And then the Humours, Flesh, and Secondary Spirits, doe dissolue, and breake, as in an Anarchy.

The Sixth is, when a Forraine Spirit, Stronger and more Eager than the Spirit of the Body, entreth the Body; As in the Stinging of Serpents. And this is the Cause (generally) that vpon all Poysons followeth Swelling: And we see Swelling followeth also, when the Spirits of the Body it selfe, Congregate too much; As vpon Blowes, and Bruises; Or when they are Pent in too much, as in Swelling vpon Cold. And we see also, that the Spirits comming of Putrefaction of Humours in Agues, &c. Which may be counted as Forraine Spirits, though they be bred within the Body, doe Extinguish and Suffocate the Naturall Spirits, and Heat.

The Seuenth is, by such a Weake Degree of Heat, as setteth the Spirits in a little Motion, but is not able, either to disgest the Parts, or to Issue the Spirits; As is seene in Flesh kept in a Roome that is not Coole; Whereas in a Coole and Wet Larder it will keepe longer. And wee see, that Viuisication (whereof Putrefaction is the Bastard Brother,) is effected by such Soft Heats; As the Hatching of Egges; The Heat of the Wombe, &c.

The Eight is, by the Releasing of the Spirits; which before were close kept by the Solidnesse of their Couerture, and thereby their Appetite of Issuing checked; As in the Artificiall Rusts induced by strong Waters, in Iron, Lead, &c. And therefore Wetting hasteneth Rust, or Putrefaction of any thing, because it softeneth the Crust, for the Spirits to come forth.

The Ninth is, by the Enterchange of Heat and Cold, or Wet and dry; As wee see in the Moulding of Earth in Frosts, and Sunne; And in the more hasty Rotting of Wood, that is sometimes wet, sometimes dry.

The Tenth is, by Time, and the Worke Procedure of the Spirits themselues, which cannot keepe their Station; Especially if they be lost to themselues; And there be not Agitation or Locall Motion. As wee see in Corne not stirred; And Mens Bodies not exercised.

All Moulds are Inceptions of Putrefaction; As the Moulds of Pyes, and Flesh; the Moulds of Orenges, and Limons; which Moulds afterwards turne into Wormes, or more odious Putrefactions: And therfore (commonly) proue to be ill

Odour. And if the Body be Liquid, and not apt to Putrifie totally, it will cast vp a Mother in the Top; As the Mothers of Distilled Waters.

Mosse is a kinde of Mould, of the Earth, and Trees. But it may be better sorted as a Rudiment of Germination; To which we referre it.

It is an Enquiry of Excellent vse, to Enquire of the Meanes of Preuenting or Staying Putrefaction, For therein consisteth the Meanes of Conseruation of Bodies; For Bodies haue two Kindes of Dissolutions; The one by Consumption, and Deficcation; The other by Putrefaction. But as for the Putrefactions of the Bodies of Men, and Liuing Creatures, (as in Agues, Wormes, Consumptions of the Lungs, Impostumes, and Vlcers both Inwards and Outwards,) they are a great Part of Physicke, and Surgery: And therefore we will reserue the Enquiry of them to the proper Place, where we shall handle Medicinal Experiments of all Sorts. Of the rest we will now Enter into an Enquiry: wherein much light may be taken, form that which hath beene said, of the Meanes to Enduce or Accelerate Putrefaction; For the Remouing that, which caused Putrefaction, doth Preuent and Auoid Putrefaction.

The First Meanes of Prohibiting or Checking Putrefaction, is Cold: For so wee see Meat and Drinke will last longer, Vnputrified, or Vnsowred, in Winter, than in Summer: And we see that Flowers, and fruits, put in Conseruatories of Snow, keepe fresh. And this worketh by the Detention of the Spirits, and Constipation of the Tangible Parts.

The Second is Astriction: For Astriction prohibiteth Dissolution: As we see (generally) in Medicines, whereof such as are Astringents doe inhibite Putrefaction; And by the same reason of Astringency, some small Quantity of Oile of Vitrioll, will keepe Fresh Water long from Putrefying. And this Astriction is in a substance that hath a Virtuall Cold; And it worketh (partly) by the fame Meanes that Cold doth.

The Third is, the Excluding of the Aire; And againe, the Exposing to the Aire; For these Contraries, (as it commeth often to passe;) worke the same Effect, according to the Nature of the Subiect Matter. So we see, that Beere, or Wine, in Bottles close stopped, last long; That the Garners vnder Ground keepe

Come longer than those aboue Ground; and that Fruit closed in Waxe keepeth fresh: And likewise Bodies put in Honey, and Flower, keepe more fresh; And Liquours, Drinkes, and Iuices, with a little Oyle cast on the Top keepe fresh. Contratiwise, we see that Cloth and Apparell, not Aired, doe breed Moathes, and Mould; And the Diuersity is, that in Bodies that need Detenties of Spirits, the Excluston of the Aire doth good; As in Drinkes, and C —— : But in Bodies that need Emission of Spirits, to discharge some of the Superfluous Moisture, it doth hurt, for they require Atring.

The fourth is Motion, and Stirring; For Putrefaction asketh Rest; For the Subtill Motion, which Putrefaction requireth, is disturbed by any Agitation; And all Locall Motion keepeth Bodies Integrall, and their Parts together; As we see that Turning ouer of Corne in a Garner; Or Letting it runne like an Houre-glasse, from an vpper Roome into a Lower, doth keepe it Sweet; And Running Waters putrefie not; And in Mens Bodles. Exercise hindreth Putrefaction; And contrariwise Rest, and Want of Motion, or Stoppings, (whereby the Runne of Humours, or the Motion of Perspiration, is stayed,) further Putrefaction; As we part partly touched a little before.

The Fifth is, the Breathing forth of the Aduentitious Moisture in Bodies; For as Wetting doth hasten Putrefaction; So Connenient Drying. (wherby the more Radicall Moisture is onely kept in,) putteth backe Putrefaction: So we see that Herbs, and Flowers, if they be dried in the Shade; Or dried in the hot Sunne, for a small time, keepe best. For the Emission of the Loose and Aduentitious Moisture, doth betray the Radicall Moisture; And carryeth it out for Company.

The Sixth is, the Strengthning of the Spirits of Bodies; For as a Great Heat keepeth Bodies from Putrefaction; But a Tepide Heat enclineth them to Putrefaction: So a Strong Spirit likewise preserueth, and a Weake or Faint Spirit disposeth to Corruption. So we finde that Salt-water corrupteth not so soone as Fresh: And Salting of Oisters, and Powdring of Meat, keepeth them from Putrefaction, It would be tried also, whether Chalke put into Water, or Drinke doth not preserue it from Putrefying, or speedy Souring. So wee see that Strong Beere, will last longer than Small; And all Things, that are hot and Aromaticall,

doe helpe to preserue Liquours, or Powders, &c. Which they doe, as well by Strengthning the Spirits, as by Soaking out the loose Moisture;

The Seuenth is, Separation of the Cruder Parts, and thereby making the Body more Equall; for all vnperfect Mixture is apt to Putrefie; And Watry Substances are more apt to Putrefie, than Oyly. So we see Distilled Waters will last longer than Raw waters; And Things that haue passed the Fire, doe last longer, than those that haue not passed the Fire; As Dried Peares, &c.

The Eighth is, the Drawing forth continually of that part, where the Putrefaction beginneth: Which is (commonly) the Loose and watry Moisture; Not onely for the Reason before giuen, that it prouoketh the Radicall Moisture to come forth with it; But because being detained in the Body, the Putrefaction taking hold of it, insecteth the rest: As we see in the Embalming dead Bodies; And the same Reason is of Preseruing Herbs, or Fruits, or Flowers, in Branne, or Meale.

The Ninth, is the Commixiture of any Thing that is more Oily, or Sweet: For such Bodies are least apt to Putrefie, the Aire working little vpon them; And they not putrefying preserue the rest. And therefore we see Syrrups, and Ointments, will last longer, than Iuyces.

The Tenth is, the Commixture of somewhat that is Dry; For Putrefaction beginneth first from the Spirits; And then from the Moisture; And that that is dry is vnapt to puttrefie: And therefore Smoake preserueth Flesh; As wee see in Bacon, and Neats-Tongues, and Martlemas Beese, &c.

The Opinion of some of the Ancients, that Blowne Aires doe preserue Bodies, longer than other Aires, seemeth to Mee Probable; For that the Blowne Aires, being Ouer-charged and Compressed, will hardly receiue the Exhaling of any Thing, but rather repulse it. It was tried in a Blowne Bladder, whereinto Flesh was put, and likewise a Flower, and it sorted not; For Dry Bladders will not Blow: And New Bladders rather further Putrefaction: The way were therfore, blow strongly, with a Paire of Bellowes, into a Hogshead, putting into the Hogshead (before) that which you would haue preserued; And in the instant that you withdraw the Bellowes, stop the Hole close.

The Experiments of Wood that Shineth in the Darke, we haue diligently driuen, and pursued. The rather, for that of all Things, that giue Light here below, it is the most Durable. And hath least Apparent Motion, Fire and Flame are in continuall Expence; Sugar shineth onely while it is in Scraping; And Salt-water while it is in Dashing; Glowing — es haue their Shining while they liue or a little after; Onely Scales of Fishes (Putrified) seeme to be of the same Nature with Shining Wood; And it is true, that all Putrefaction hath with it an Inward Motion, as well as Fire, or Light. The Triall sorted thus. 1. The Shining is in some Peeces more Bright, in some more Di — ; but the most Bright of all doth not attaine to the Light of a Glow-w —— . 2. The Woods that haue beene tried to shine, are chiefly Sallow, and Willow; Also the A — , and Husle; It may be, it holdeth in others. 3. Both Roots, and Bodies doe shine, but the Roots better. 4. The Colour of the Shining Part, by Daylight, is in some Peeces White, in some Peeces inclining to Red; Which in the Countrey they call the White, and Red Garret. 5. The Part that Shineth, is, (for the most part) somewhat Safe, and Moist to feele to; But some was sound to be Firme and Hard; So as it might be figured into a Crosse, or into Beads, &c. But you must not looke to haue an Image, or the like, in any Thing that is Lightsome; For euen a face in Iron red Hot will not be seene, the Light confounding the small differences of Lightsome and Darksome, which shew the figure. 6. There was the Shining Part pared off, till you came to that, that did not Shine; But within two Dayes the Part Contiguous began also to Shine, being laid abroad in the Dew; So as it seemeth the Putrefaction spreadeth. 7. There was other dead Wood of like kinde, that was Laid abroad, which Shined not at the first; But after a Nights lying abroad began to Shine. 8. There was other Wood, that did First Shine; And being laid dry in the House, within fiue or six daies, Lost the Shining; And laid abroad againe, Recouered the Shining: 9. Shining woods, being laid in a Dry Roome, within a Seuen night, lose their Shining; But being laid in a Cellar, or Darke Roome, kept the Shining. 10. The Boring of Holes, in that kinde of Wood, and then laying it abroad, seemeth to conduce to make it Shine: The Cause is, for that all Solution of Continuity doth helpe on Putrefaction, as was touched before. 11. No Wood

hath beene yet tried to Shine, that was cut downe aliue, but such as was Rotted, both in Stocke, and Root, while it grew. 12. Part of the Wood that Shined, was Steeped in Oyle, and retained the Shining a Forthnight. 13. The like succeeded in some Steeped in Water, and much better. 14. How long the Shining will continue, if the Wood be laid abroad euery Night, and taken in and Sprinckled with Water in the Day, is not yet tryed. 15. Triall was made of laying it abroad in Frostie weather, which hurt it not. 16. There was a great Peece of a Root which did shine, and the Shining Part was Cut off, till no more Shined; Yet after two Nights, though it were kept in a drie Roome, it got a Shining.

The Bringing, forth of liuing Creatures may be accelerated in two Respects: The one, if the Embryon ripeneth and perfecteth sooner: The other if there be some Cause from the Mothers Body, of Expulsion or Putting it downe: whereof the Former is good, and argueth Strength; The Latter is ill, and commeth by Accident or Disease. And therefore the Ancient Obseruation is true, that the Childe borne in the Seuenth Mo — th, doth commonly well; But Borne in the Eighth Moneth, doth (for the most part) die. But the Cause assigned is Fabulous; Which is, that in the Eighth Moneth, should be the Returne of the Raigne, of the Planet Saturne: which (as they say) is a Planet Maligne; whereas in the Seuenth is the Raigne of the Moone, which is a Planet Propitious. But the true Cause is, for that where there is so great a Preuention of the Ordinary time, it is the lustinesse of the Childe; But when it is lesse, it is some Indisposition of the Mother.

To Accelerate Growth or Stature, it must proceed; Either from the Plentie of the Nourishment; Or from the Nature of the Nourishment; Or from the Quickening and Exciting of the Naturall Heat. For the first, Excesse of Nourishment is hurtfull; For it maketh the Childe Corpulent; And Growing in Breadth, rather than in Heighth. And you may take an Experiment from Plants, which, if they spread much, are seldome tall. As for the Nature of the Nourishment; First, it may not be too Drie; And therefore Children in Dayrie Countries doe wax more tall, than where they feed more vpon Bread, and Flesh. There is also a receiued Tale; That Boyling of Dasie Roots in Milke (which it is

certaine are great Driers) will make Dogs little. But so much is true, that an Ouer-drie Nourishment in Childhood putteth backe Stature. Secondly, the Nourishment must be of an Opening Nature; For that Attenuateth the Iuice, and furthereth the Motion of the Spirits, vpwards. Neither is it without cause, that Xenophon, in the Nouriture of the Persian Children, doth so much commend their Feeding vpon Cardamon; which (hee saith) made them grow better, and be of a more Actiue Habit. Cardamon is in Latine Nasturtium; And with vs Water-Cresses; Which, it is certaine, is an Herbe, that whilest it is young, is Friendly to Life. As for the Quickening of Naturall Heat, it must be done chiefly with Exercise; And therefore (no doubt) much Going to Schoole, where they sit so much, hindreth the Growth of Children; whereas Countrey People, that goe not to Schoole, are commonly of better Stature. And againe Men must beware, how they giue Children, any thing that is Cold in Operation; For euen Long Sucking doth hinder both Wit, and Stature. This hath beene tried, that a Whelpe, that hath beene fed with Nitre in Milke, hath become very little, but extreme liuely: For the Spirit of Nitre is Cold. And though it be an Excellent. Medicine, in Strength of yeares, for Prolongation of Life; yet it is, in Children and young Creatures, an Enemy to Growth: And all for the same Reason, For Heat is requisite to Growth: But after a Man is come to his Middle Age, Heat consumeth the Spirits; which the Coldnesse of the Spirit of Nitre doth helpe to condense, and correct.

There be two Great Families of Things; You may terme them by seuerall Names; Sulphureous and Mercuriall, which are the Chymists Words: (For as for their Sal, which is their Third Principle, it is a Compound of the other two;) Inflammable and Not Inflammable; Mature and Crude; Oily and Watry. For we see that in Subterranies there are, as the Fathers of their Tribes, Brimstone and Mercury: In Vegetables, and Liuing Creatures there is Water and Oyle: In the Inferiour Order of Pneumaticalls there is Aire and Flame: And in the Superiour, there is the Body of the Starre, and the Pure Sky. And these Paires, though they be vnlike in the Primitiue Differences of Matter, yet they seeme to haue many Consents: For Mercury and Sulphure are principall Materialls of Metalls; Water and Oyle, are principall Materialls of Vegetables, and Animals; And seeme to

differ but in Maturation, or Concoction: Flame (in Vulgar Opinion) is but Aire Incensed; And they both haue Quicknesse of Motion, and Facility of Cession, much alike: And the Interstellar Sky, (though the Opinion be vaine, that the Starre is the Denser Part of his Orbe,) hath notwithstanding so much Affinity with the Starre, that there is a Rotation of that, as well as of the Starre. Therefore, it is one of the greatest Magnalia Naturae, to turne Water, or Watry Iuyce, into Oile or Oily Iuyce: Greater in Nature, than to turne Siluer, or Quick-siluer, into Gold.

The Instances we haue, wherein Crude and Watry Substance turneth into Fat and Oily, are of foure kindes. First in the Mixture of Earth and Water; which mingled by the helpe of the Sunne, gather a Nitrous Fatnesse, more than either of them haue seuerally; As we see, in that they put forth Plants, which need both Iuyces.

The Second is in the Assimilation of Nourishment, made in the Bodies of Plants, and Liuing Creatures; Where of Plants turne the Iuyce of meere Water and Earth, into a great deale of Oily Matter: Liuing Creatures, though much of their Fat, and Flesh, are out of Oily Aliments, (as Meat, and Bread,) yet they Assimilate also in a Measure their Drinke of VVater, &c. But these two Wayes of Version of Water into Oyle, (namely by Mixture, and by Assimilation) are by many Passages, and Percolations, and by long Continuance of soft Heats, and by Circuits of Time.

The third is in the Inception of Putrefaction; As in Water Corrupted; And the Mothers of Waters Distilled; Both which haue a kinde of Fatnesse, or Oyle.

The Fourth is in the Dulcoration of some Metalls; As Saccharum Saturni, &c.

The Intention of Version of Water into a more Oily Substance, is by Disgestion; For Oile is almost Nothing else but Water disgested; And this Disgestion; is principally by Heats Which Heat must be either Outward, or Inward: Againe, it may be by Prouocation, or Excitation; Which is caused by the Mingling of Bodies already Oily, or Disgested; For they will somewhat Communicate their Nature with the rest. Disgestion also is strongly effected by direct Assimilation, of Bodies Crude into Bodies Disgested; As in Plants, and

Liuing Creatures, whose Nourishment is far more Crude than their Bodies: But this Disgestion is by a great Compasse, as hath beene said. As for the more full Handling of these two Principles, whereof this is but a Taste; (the Enquiry of which is one of the Profoundest Enquiries of Nature,) We leaue it to the Title of Version of Bodies; And likewise to the Title of the First Congregations of Matter; Which like a Generall Assembly of Estates, doth giue Law to all Bodies.

A Chameleon is a Creature about the Bignesse of an Ordinary Lizard: His Head vnproportionably bigge; His Eyes great: He moueth his Head without the writhing of his Necke, (which is inflexible,) as a Hogge doth: His Backe crooked; His Skin Spotted with little Tumours, lesse Eminent nearer the Belly; His Taile slender, and long: On each Foot he hath fiue Fingers; three on the Outside, and two on the Inside; His Tongue of a maruellous Length in respect of his Body, and hollow at the end; Which he will launch out to prey vpon Flses. Of Colour Greene, and of a dusky Yellow, brighter and whiter towards the Belly; Yet spotted with Blew, White, and Red. If hee be laid vpon Greene, the Greene predominateth; If vpon Yellow, the Yellow; Not so if he be laid vpon Blew, or Red, or White; Onely the Greene Spots receiue a more Orient Lustre: Laid vpon Blacke, he looketh all Blacke, though not without a Mixture of Greene. He feedeth not only vpon Aire, (though that be his principall Sustenance;) For sometimes hee taketh Flies, as was said; yet some that haue kept Chameleons a whole yeare together, could neuer perceiue that euer they fed vpon any Thing else but Aire; And might obserue their Bellies to swell after they had exhausted the Aire, and closed their Iawes; Which they open commonly against the Rayes of the Sunne. They haue a foolish Tradition in Magicke, that if a Chameleon be burnt vpon the Top of a House, it will raise a Tempest; Supposing (according to their vaine Dreames of Sympathies) because he nourisheth with Aire, his Body should haue great vertue to make Impression vpon the Aire.

It is reported by one of the Ancients, that in Part of Media, there are Eruptions of Flames out of Plaines; And that those Flames are cleare, and cast not forth such Smoake, and Ashes, and Pummice, as Mountaine Flames doe. The Reason (no doubt) is, because the Flame is not pent, as it is in Mountaines, and Earth-

quakes which cast Flame. There be also some Blinde Fires, vnder Stone, which flame not out, but Oile being powred vpon them, they flame out. The Cause whereof is, for that it seemeth, the Fire is so choaked, as not able to remoue the Stone, it is Heat, rather than Flame; Which neuerthelesse is sufficient to Enflame the Oyle.

It is reported, that in some Lakes, the Water is so Nitrous, as if Foule Cloaths be put into it, it scoureth them of it selfe: And if they stay any whit long, they moulder away. And the Scouring Vertue of Nitre is the more to be noted, because it is a Body Cold; And we see Warme Water scoureth better than Cold. But the Cause is, for that it hath a Subtill Spirit, which seuereth and diuideth any thing that is soule, and Viscous, and sticketh vpon a Body.

Take a Bladder, the greatest you can get; Fill it full of Winde, and tye it about the Necke with a Silke thred waxed; And vpon that put likewise Wax very close; So that when the Neck of the Bladder dryeth, no Aire may possibly get in, nor out. Then bury it three or foure foot vnder the Earth, in a Vault, or in a Conferuatory of Snow, the Snow being made hollow about the Bladder; And after some Forthnights distance, see whether the Bladder be shruncke: For if it be, then it is plaine, that the Coldnesse of the Earth, or Snow, hath Condensed the Aire, and brought it a Degree nearer to Water: Which is an Experiment of great Consequence.

It is a Report of some good credit, that in Deepe Caues, there are Pensile Crystall, and Degrees of Crystall that drop from aboue; And in some other, (though more rarely) that rise from below. Which though it be chiefly the Worke of Cold, yet it may be, that Water, that passeth thorow the Earth, gathereth a Nature more clammy, and fitter to Congeale, and become Solide, than Water of it selfe. Therfore Triall would be made, to lay a Heape of Earth, in great Frosts, vpon a Hollow Vessell, putting a Canuase betweene, that it falleth not in: And poure Water vpon it, in such Quantitie, as will be sure to soake thorow; And see whether it will not make an harder Ice in the bottome of the Vessell, and lesse apt to dissolue, than ordinarily. I suppose also, that if you make the Earth narrower at the bottome, than at the Top, in fashion of a Sugar Loafe Reuersed,

it will helpe the Experiment. For it will make the Ice, where it Issueth, lesse in Bulke; And euermore Smalnesse of Quantity is a Helpe to Version.

Take Damaske Roses, and pull them; Then dry them vpon the Top of an House, vpon a Lead or Tarras, in the hot Sunne, in a cleare day, betweene the Houres (onely) of twelue and two; or there abouts. Then put them into a Sweet Dry Earthen Bottle, or a Glasse, with narrow Mouthes, stuffing them close together, but without Bruising: Stop the Bottle, or Glasse, close, and these Roses will retaine, not onely their Smell Perfect, but their Colour fresh, for a yeare at least. Note, that Nothing doth so much destroy any Plant, or other Body, either by Putrefaction, or Arefaction, as the Aduentitious Moisture, which hangeth loose in the Body, if it be not drawne out. For it betrayeth and tolleth forth the Innate and Radicall Moisture, along with it, when it selfe goeth forth. And therefore in Liuing Creatures, Moderate Sweat doth preserue the Iuyce of the Body. Note that these Roses, when you take them from the Drying, haue little or no Smell; So that the Smell is a Second Smell, that issueth out of the Flower afterwards.

The Continuance of Flame, according vnto the diuersity of the Body Enflamed, and other Circumstances, is worthy the Enquiry; Chiefly, for that though Flame be (almost) of a Momentany Lasting, yet it receiueth the More, and the Lesse: we will first therefore speake (at large) of Bodies Enflamed, wholly, and Immediately, without any Wieke to helpe the Inflammations. A Spoonefull of Spirit of Wine, a little heated, was taken, and it burnt as long as came to 116. Pulses. The same Quantity of Spirit of Wine, Mixed with the Sixth Part of a Spoonefull of Nitre, burnt but to the space of 94. Pulses. Mixed with the like Quantity of Bay-salt, 83. Pulses. Mixed with the like Quantity of Gunpowder, which dissolued into a Blacke water, 110. Pulses. A Cube, or Pellet of Yellow Waxe, was taken, as much as halfe the Spirit of Wine, and set in the Middest, and it burnt onely to the space of 87. Pulses. Mixed with the Sixth Part of a spoonefull of Milke, it burnt to the space of 100. Pulses; And the Milke was crudled. Mixed with the Sixth Part of a spoonefull of Water, it burnt to the space of 86. Pulses; With an Equall Quantity of Water, onely to the space of 4. Pulses.

A small Pebble was laid in the Middest; and the Spirit of Wine burnt to the space of 94. Pulses. A Peece of Wood, of the Bignesse of an Arrow, and about a Fingers length, was set vp in the Middest, and the Spirit of Wine burnt to the space of 94. Pulses. So that the Spirit of Wine Simple, endured the longest; And the Spirit of Wine with the Bay-salt, and the Equall Quantity of Water, were the shortest.

Consider well, whether the more speedy Going forth of the flame, becaused, by the Greater Vigour of the Flame in Burning; Or by the Resistance of the Body mixed, and the Auersion thereof to take Flame: Which will appeare by the Quantitie of the Spirit of Wine, that remaineth after the Going out of the Flame. And it seemeth cleerely to be the latter; For that the Mixture of Things least apt to burne, is the Speediest in going out. And note, by the way, that Spirit of Wine burned, till it goe out of it selfe, will burne no more; And tasteth nothing so hot in the Mouth, as it did; No nor yet sowre, (as if it were a degree towards Vinegar,) which Burnt Wine doth; but flat and dead.

Note, that in the Experiment of Wax aforesaid, the Wax dissolued in the burning, and yet did not incorporate it selfe, with the Spirit of Wine, to produce one Flame; but wheresoeuer the Wax floated, the Flame forsooke it, till at last it spread all ouer, and put the Flame quite out.

The Experiments of the Mixtures of the Spirit of Wine enflamed, are Things of discouerie, and not of Vse: But now wee will speake of the Continuance of Flames, such as are vsed for Candles, Lamps, or Tapers; consisting of Inflammable Matters, and of a Wieke that prouoketh Inflamation. And this importeth not only Discouerie, but also Vse and Profit; For it is a great Sauing, in all such Lights, if they can be made as faire and bright as others, and yet last longer. Wax Pure made into a Candle, and Wax Mixed seuerally into Candle-stuffe, with the Particulars that follow; (viz Water, Aqua-vitae, Milke, Bay-salt, Oyle, Butter, Nitre, Brimstone, Saw-dust,) Euery of these bearing a Sixth Part to the Wax; And euery of these Candles mixed, being of the same Weight and Wieke with the Wax Pure, proued thus in the Burning, and Lasting. The Swiftest in Consuming was that with Saw-dust; Which first burned faire, till some part of

the Candle was consumed; and the Dust gathered about the Snaste; But then it made the Snaste bigge, and long, and to burne duskishly, and the Candle wasted in halfe the time of the Wax Pure. The next in Swiftnesse, were the Oyle, and Butter, which consumed, by a Fifth part, swifter than the Pure Wax. Then followed in Swiftnesse the Cleare Wax it selfe. Then the Bay-Salt, which lasted about an Eighth part longer than the Cleare Wax. Then followed the Aqua-vita, which lasted about a Fifth part longer than the Cleare Wax. Then followed the Milke, and Water, with little difference from the Aqua-vita, but the Water slowest. And in these foure last, the Wieke would spit forth little Sparks. For the Nitre, it would not hold lighted aboue some Twelue Pulses; But all the while it would spit out Portions of Flame, which afterwards would goe out into a vapour. For the Brimstone, it would hold lighted, much about the same time with the Nitre; But then after a little while, it would harden and cake about the Snaste; So that the Mixture of Bay-Salt with Wax, will winne an Eighth part of the time of lasting, and the Water a Fifth.

After the Seuerall Materialls were tried, Triall was likewise made of seuerall Wickes; As of Ordinary Cotton; Sowing Thred; Rush; Silke; Straw; and Wood. The Silke, Straw, and Wood, would flame a little, till they came to the Wax, and then goe out: of the Other Three, the Thred consumed faster than the Cotton, by a Sixth part of Time: The Cotton next: Then the Rush consumed flower than the Cotton, by at least a third part of time. For the Bignesse of the Flame, the Cotton, and Thred, cast a Flame much alike; and the Rush much lesse, and dimmer. Quare, whether Wood, and Wiekes both, as in Torches, consume faster, than the Wiekes Simple?

We haue spoken of the Seuerall Materialls, and the Seuerall Wiekes: But to the lasting of the Flame, it importeth also; Not only what the Materiall is, but in the same Materiall, whether it be Hard, Soft, Old, New, &c. Good Housewines, to make their Candles burne the longer, vse to lay them (one by one) in Bran, or Flower, which make them harder, and so they Consume the flower: Insomuch, as by this meanes, they will out-last other Candles, of the same Stuffe, almost Halfe in Halfe. For Bran and Flower haue a Vertue to Harden: So that both Age, and

lying in the Bran, doth helpe to the Lasting. And wee see that Wax Candles last longer than Tallow Candles, because Wax is more firme, and hard.

The Lasting of Flame also dependeth vpon the easie Drawing of the Nourishment; As we see in the Court of England, there is a Seruice which they call All-night; which is (as it were) a great Cake of Wax, with the Wieke in the Middest; whereby it commeth to passe, that the Wieke fetcheth the Nourishment further off. Wee see also that Lamps last longer, because the Vessell is farre broader, than the Bredth of a Taper, or Candle.

Take a Turretted Lampe of Tinne, made in the forme of a Squire; The Heighth of the Turret being thrice as much, as the length of the lower part, whereupon the Lampe standeth: Make only one Hole in it, at the End of the Returne furthest from the Turret. Reuerse it, and fill it full of Oile, by that Hole; And then set it vpright againe; And put a Wieke in at the Hole; And lighten it: You shall finde, that it will burne flow, and a long time. Which is caused, (as was said last before,) for that the Flame fetcheth the Nourishment a Farre off. You shall finde also, that as the Oile wasteth, and descendeth, so the Top of the Turret, by little and little, filleth with Aire; which is caused by the Rarefaction of the Oile by the Heat. It were worthy the Obseruation, to make a Hole, in the Top of the Turret, and to trie, when the Oile is almost consumed, whether the Aire made of the Oile, if you put to it a Flame of a Candle, in the letting of it forth, will Enflame. It were good also to haue the Lampe made, not of Tinne, but of Glasse, that you may see how the Vapour, or Aire gathereth, by degrees, in the Top.

A fourth Point, that importeth the lasting of the Flame, is the Closenesse of the Aire, wherein the Flame burneth. Wee see, that if Wind bloweth vpon a Candle, it wasteth apace. We see also, it lasteth longer in a Lanthorne, than at large. And there are Traditions of Lamps, and Candles, that haue burnt a very long time, in Caues, and Tombes.

A Fifth Point, that importeth the Lasting of the Flame, is the Nature of the Aire, where the Flame burneth; whether it be Hot or Cold; Moist or Drie. The Aire, if it be very Cold, irritateth the Flame, and maketh it burne more fiercely;

(As Fire scorcheth in Frostie weather;) And so furthereth the Consumption. The Aire once heated, (I conceiue) maketh the Flame burne more mildly, and so helpeth the Continuance. The Aire, if it be Drie, is indifferent: The Aire, if it be Moist, doth in a Degree quench the Flame: (As wee see Lights will goe out in the Dumps of Mines:) And howsoeuer maketh it burne more dully: And so helpeth the Continuance.

Burialls in Earth serue for Preseruation; And for Condensation; And for Induration of Bodies. And if you intend Condensation, or Induration you may burie the Bodies so, as Earth may touch them: As if you will make Artificiall Porcellane, &c. And the like you may doe for Conseruation, if the Bodies be Hard, and Solid; As Clay, Wood, &c. But if you intend Preseruation of Bodies, more Soft and Tender, then you must doe one of these two: Either you must put them in Cases, whereby they may not touch the Earth; Or else you must vault the Earth, whereby it may hang ouer them, and not touch them; For if the Earth touch them, it will doe more hurt, by the Moisture, causing them to putrifie, than good by the virtuall Cold, to conserue them; Except the Earth be very Drie, and Sandie.

An Orenge, Limon, and Apple, wrapt in a Linnen Cloth, being buried for a Forthnights Space, foure Foot deepe within the Earth, though it were in a Moist Place, and a Rainie Time, yet came forth, no wayes Mouldie, or Rotten, but were become a little harder than they were; Otherwise fresh in their Colour; But their Iuyce somewhat flatted. But with the Buriall of a Forthnight more they became Putrified.

A Bottle of Beere, buried in like manner, as before, became more liuely, better tasted, and Clearer, than it was. And a Bottle of Wine in like manner. A Bottle of Vinegar, so buried, came forth more liuely, and more Odoriferous, smelling almost like a Violet. And after the whole Moneths Buriall, all the Three came forth, as fresh and liuely, if not better, than before.

It were a profitable Experiment, to presrue Orenges, Limons, and Pomgranates, till Summer; For then their Price will be mightily increased. This may be done, if you put them in a Pot or Vessell, well couered, that the Moisture

of the Earth come not at them; Or else by putting them in a Conseruatorie of Snow. And generally, whosoeuer will make Experiments of Cold, let him be prouided of three Things; A Conseruatorie of Snow; A good large Vault, twenty foot at least vnder the Ground; And a Deepe Well;

There hath beene a Tradition, that Pearle, and Cora-, and TurchoisStone, that haue lost their Colours, may be recouered by Burying in the Earth: Which is a thing of great profit, if it would sort: But vpon Triall of Six Weekes Buriall, there followed no Effect. It were good to trie it, in a Deepe Well; Or in a Conseruatory of Snow, where the Cold may be more Constringent; And so make the Body more vnited, and thereby more Resplendent.

Mens Bodier are heauier, and lesse disposed to Motion, when S — ther — Winds blow, than when Northerne. The Cause is, for that when the Southerne Winds blow, the Humours doe (in some Degree) melt, and waxe fluide, and so flow into the Parts; As it is seene in Wood, and other Bodies, which, when the Southerne Winds blow, doe swell. Besides, the Motion and Actiuity of the Body consisteth chiefly in the Sinewes, which, when the Southerne Wind bloweth, are more relaxe.

It is commonly seene, that more are Sick in the Summer, and more Dye in the Winter; Except it be in Peslilent Diseases, which commonly raigne in Summer, or Autumne. The Reason is, because Diseases are bred (indeed) chiefly by Heat; But then they are Cured most by Sweat, and Purge; which in the Summer commeth on, or is prouoked, more Easily: As for Pestilent Diseases, the Reason why most Dye of them in Summer, is because they are bred most in the Summer; For otherwise those that are touched are in most Danger in the Winter.

The Generall Opinion is, that Yeares Hot and Moist, are most Pestilent; Vpon the Superficiall Ground, that Heat and Moisture cause Putrefaction. In England it is found not true; For, many times, there haue beene great Plagues in Dry Yeares. Whereof the Cause may be, for that Drought in the Bodies of Islanders, habituate to Moist Aires, doth Exasperate the Humours, and maketh them more apt to Putrifie, or Enflame: Besides, it tainteth the Waters (commonly,) and

maketh them lesse wholesome. And againe in Barbary, the Plagues breake vp in the Summer-moneths, when the Weather is Hot and Dry.

Many Diseases, (both Epidemicall, and others,) breake forth at Particular times. And the Cause is falsely imputed to the Constitution of the Aire, at that time, when they breake forth, or raigne; whereas it proc-edeth (indeed) from a Precedent Sequence, and Series of the Seasons of the Yeare: And therefore Hippocrates, in his Prognosticks, doth make good Obseruations, of the Diseases, that ensue vpon the Nature, of the Precedent foure Seasons of the Yeare.

Triall hath beene made, with Earthen Bottles well stopped, hanged in a Well of Twenty Fathome deepe, at the least; And some of the Bettles haue beene let downe into the Water, some others haue hanged aboue, within about a fathome of the Water; And the Liquours so tried haue beene, Beere, (not New, but Ready for drinking,) and Wine, and Milke. The Proofe hath beene, that both the Beere, and the Wine, (as well within Water, as aboue,) haue not beene palled or deaded at all; But as good, or somewhat better, than Bottles of the same Drinks, and Stalenesse, kept in a Celler. But those which did hang aboue Water, were apparently the best; And that Beere did flower a little; whereas that vnder Water did not, though it were Fresh. The Milke sowred, and began to Purrifie. Neuerthelosse it is true, that there is a Village neare Blois, where in Deepe Canes they doe thicken Milke; In such sort, that it becommeth very pleasant; Which was some Cause of this Triall of Hanging Milke in the Well: But our proofe was naught; Neither doe I know, whether that Milke in those Caues, be first boysed; It were good therefore to try it with Milke Sodden, and with Creame; For that Milke of it selfe is such a Compound Body, of Creame, Curds, and Whey, as it is eas-ly Turned, and Dissolued. It were good also to try the Beere, when it is in Wort, that it may be seene, whether the Hanging in the Well, will Accelerate the Ripening and Clarifying of it.

Diuers, we see, doe Stut. The Cause may be, (in most,) the Refrigeration of the Tongue; Whereby it is lesse apt to moue. And therfore we see, that Naturalls doe generally Stut: And we see that in those that Stut, if they drinke Wine moderately, they Stut lesse, because it heateth: And so we see, that they that

Stut, doe Stut more in the first Offer to speake, than in Continuance; Because the Tongue is, by Motion, somewhat heated. In some also, it may be, (though rarely,) the Drinesse of the Tongue; which likewise maketh it lesse apt to moue, as well as Cold; For it is an Affect that commeth to some Wise and Great Men; As it did vnto Moses, who was Ling-epr apedita; And many Stutters (we finde) are very Cholericke Men; Choler Enducing a Drinesse in the Tongue.

Smells, and other Odours, are Sweeter in the Aire, at some Distance, than neare the Nose; As hath beene partly touched heretofore. The Cause is double: First the finer Mixture, or Incorporation of the Smell: For we see that in Sounds likewise, they are Sweetest, when we cannot heare euery Part by it selfe. The other Reason is, for that all Sweet Smells haue ioyned with them, some Earthy or Crude Odours; And at some distance the Sweet, which is the more Spirituall, is Perceiued; And the Earthy reacheth not so farre.

Sweet Smells are most forcible, in Dry Substances, when they are Broken; And so likewise in Orenges, or Limons, the Nipping of their Rinde, giueth out their Smell more: And generally, when Bodies are Moued or Stirred, though not Broken, they Smell more; As a SweetBagge waued. The Cause is double: The one, for that there is a Greater Emission of the Spirit, when Way is made: And this holdeth in the Breaking, Nipping, or Crushing; It holdeth also, (in some Degree) in the Mouing: But in this last, there is a Con-urrence of the Second Cause; Which is the Impulsion of the Aire, that bringeth the Sent faster vpon vs.

The daintiest Smells of Flowers, are out of those Plants, whose Leaues smell not; As Violets, Roses, Wall-flowers, Gilly-flowers, Pinckes, Woodbines, Vine-flowers, Apple-Bloomes, Lime-Tree Bloomes, Beane-Bloomes, &c. The Cause is, for that where there is Heat and strength enough in the Plant, to make the Leaues Odorate, there the Smell of the Flower is rather Euanide and Weaker, than that of the Leaues; As it is in Rose-Mary-Flowers, Lauender-Flowers, and Sweet-Briar-Roses. But where there is lesse Heat, there the Spirit of the Plant, is disgested and refined, and feuered from the Grosser Iuyce, in the Esstorescence, and not before.

Most Odours Smell best, Broken or Crusht, as hath beene said; But Flowers Pressed or Beaten, doe leese the Freshnesse and Sweetnesse of their Odour. The Cause is, for that when they are Crushed, the Grosser and more Earthy Spirit commeth out with the Finer, and troubleth it; Whereas in stronger Odours there are no such Degrees of the Issue of the Smell.

It is a Thing of very good Vse, to Discouer the Goodnesse of Waters, The Taste, to those that Drinke Water onely, doth somewhat: But other Experiments are more sure. First, try Waters by Weight; Wherein you may finde some difference, though not much: And the Lighter you may account the Better.

Secondly, try them by Boyling vpon an Equall Fire: And that which consumeth away fastest, you may account the Best.

Thirdly, try them in Seuerall Bottles, or Open Vessels, Matches in euery Thing else, and see which of them Last Longest, without Stench, or Corruption. And that which holdeth Vnputrified longest, you may likewise account the Best.

Fourthly, try them by Making Drinkes Stronger, or Smaller, with the same Quantity of Mault; And you may conclude, that that Water, which maketh the Stronger Drinke, is the more Concocted, and Nourishing; though perhaps it be not so good for Medicinall vse. And such Water (commonly) is the Water of Large and Nanigable Riuers: And likewise in Large and Cleane Ponds of Standing Water: For vpon both them, the Sunne hath more power, than vpon Fountaines, or Small Riuers. And I concelue that Chalke-water is next them the best, for going furthest in Drinke: For that also helpeth Concoction; So it be out of a Deepe Well; For then it Cureth the Rawnesse of the Water; But Chalkie Water, towards the Top of the Earth, is too fretting; As it appeareth in Laundry of Cloaths, which weare out apace, if you vse such Waters.

Fifthly, The Houswiues doe finde a Difference in Waters, for the Bearing, or Not Bearing of Soape: And it is likely that the more Fat Water will beare Soape best; For the Hungry Water doth kill the Vnctuous Nature of the Soape.

Sixthly, you may make a Iudgement of Waters, according to the Place, whence they Spring, or Come: The Rain-Water is, by the Physitians, esteemed the Finest, and the best; But yet it is said to putrifie soonest; which is likely,

because of the Finenesse of the Spirit: And in Conseruatories of Raine-water, (such as they haue in Venice, &c.) they are and not so Choice waters; The worse, (perhaps,) because they are Couered aloft, and kept from the Sunne. Snow-water is held vnwholesome; In so much as the People, that dwell at the Foot of the SnowMountaines, or otherwise vpon the Ascent, (especially the Women,) by drinking of Snow-water, haue great Bagges hanging vnder their Throats. Well-water, except it be vpon Chalke, or a very plentifull Spring, maketh Meat Red; which is an ill Signe. Springs on the Tops of High-Hills are the best: For both they seeme to haue a Lightnesse, and Appetite of Mounting; And besides they are most pure and Vnmingled; And againe are more Percolated thorow a great Space of Earth. For Waters in Valleyes, ioyne in effect vnder Ground with all Waters of the same Leuell; Whereas Springs, on the Tops of Hills, passe thorow a great deale of Pure Earth, with lesse Mixture of other Waters.

Seuenthly, Iudgement may be made of Waters by the Soyle whereupon the Water runneth; As Pebble is the Cleanest, and best tasted; And next to that Clay-water; And Thirdly, Water vpon Chalke; Fourthly that vpon Sand; And Worst of all vpon Mudde. Neither may you trust Waters that Taste Sweet, For they are commonly found in Rising Grounds of great Cities; which must needs take in a great deale of Filth.

In Peru, and diuers Parts of the West Indies, though vnder the Line, the Heats are not so Intolerable, as they be in Barbary, and the Skirts of the Torrid Zone. The Causes are, First the Great Brizes, which the Motion of the Aire in great Circles, (such as are vnder the Girdle of the World,) produceth; Which doe refrigerate; And therefore in those Parts Noone is nothing so hot, when the Brizes are great, as about Nine or Ten of the Clocke in the Fore-Noone. Another Cause is, for that the Length of the Night, and the Dewes thereof, doe compense the Heat of the Day. A third Cause is the Stay of the Sunne; Not in Respect of Day and Night, (for that wee spake of before,) but in Respect of the Season; For vnder the Line, the Sunne crosseth the Line, and maketh two Summers, and two Winters; But in the Skirts of the Torrid Zone, it doubleth, and goeth backe againe, and so maketh one Long Summer.

The Heat of the Sunne maketh Men Blacke in some Countries, as in AEthiopia, and Ginny, &c.Fire doth it not, as wee see in GlasseMen, that are continually about the Fire. The Reason may be, because Fire doth licke vp the Spirits, and Bloud of the Body, so as they Exhale; So that it euer maketh Men looke Pale, and Sallow; But the Sunne, which is a Gentler Heat, doth but draw the Bloud to the Outward Parts; And rather Concooteth it, than Soaketh it; And therefore wee see that all AEthiapes are Fleshy, and Plumpe, and haue great Lips; All which betoken Moisture retained, and not drawne out. Wee see also, that the Negroes are bred in Countries that haue Plenty of Water, by Riuers, or otherwise: For Meroe, which was the Metropolis of AEthiopia, was vpon a great Lake: And Congo, where the Negroes are, is full of Riuers. And the Confines of the Riuer Niger, where the Negroes also are, are well watered: And the Region about Capo Verde, is likewise Moist, in so much as it is pestilent through Moisture: But the Countries of the Abyssenes, and Barbary, and Peru. where they are Tawney, and Oliuaster, and Pale, are generally more Sandy, and Dry. As for the AEthiopes, as they are Plumpe, and Fleshy; So (it may bee) they are Sanguine, and ruddy Coloured, if their blacke Skinne would suffer it to be seene.

Some Creatures doe moue a good while after their Head is off; As Birds; Some a very little time; As Men, and all beasts; Some moue, though cut in feuerall Pieces; As Snakes, Eeles, Wormes, Flies, &c. First therefore it is certaine, that the Immediate Cause of Death, is the Resolution or Extinguishment of the Spirits; And that the Destruction or Corruption of the Organs, is but the Mediate Cause. But some Organs are so peremptorily necessary, that the Extinguishment of the Spirits doth speedily follow; But yet so, as there is an Interim of a Small Time. It is reported by one of the Ancients, of credit, that a Sacrificed Beast hath lowed, after the Heart hath beene feuered; And it is a Report also of Credit, that the Head of a Pigge hath beene opened, and the Braine put into the Palme of a Mans hand, trembling, without breaking any part of it, or feuering it from the Marrow of the Back-bone; During which time the Pigge hath beene, in all appearance, starke dead, and without Motion; And after a small Time the Braine hath beene replaced, and the Skull of the

Pigge closed, and the Pigge hath a little after gone about. And certaine it is, that an Eye vpon Reuenge hath beene thrust forth, so as it hanged a pretty distance by the Visuall Nerue; And during that time the Eye hath beene without any Power of Sight; And yet after (being replaced) recouered Sight. Now the Spirits are chiefly in the Head, and Cells of the Braine which in Men, and Beasts are Large; And therefore, when the Head is off, they moue little or Nothing. But Birds haue small Heads, and therefore the Spirits are a little more dispersed in the Sinewes, whereby Motion remaineth in them a little longer; In so much as it is Extant in Story, that an Emperour of Rome, to shew the Certainty of his Hand, did Shoote a great Forked Arrow at an Estrich, as shee ranne swiftly vpon the Stage, and strooke off her Head; And yet shee continued the Race, a little way, with the Head off. As for Wormes, and Flies, and Eeles, the Spirits are diffused almost all ouer; And therefore they moue in their Seuerall Pieces.

V. Century.

WE will now enquire of Plants or Vegetables: And we shall doe it with diligence. They are the principall Part of the Third Dayes Worke. They are the first Producat, which is the Word of Animation: For the other Words are but the Words of Essence; And they are of excellent and generall Vse, for Food, Medicine, and a Number of Mechanicall Arts.

There were sowen in a Bed, Turnip-Seed, Radish-Seed, Wheat, Cucumber-Seed, and Pease. The Bed we call a Hot-Bed, and the Manner of it is this. There was taken Horse-dung, old, and well rotted; This was laid vpon a Banke, halfe a foot high, and supported round about with Planks; And vpon the Top was cast Sifted Earth, some two Fingers deepe; And then the Seed Sprinkled vpon it, hauing beene steeped all night in Water Mixed with Cow dung. The Turnip-Seed, and the Wheat came vp halfe an Inch aboue Ground, within two dayes after, without any Watring. The Rest the third day. The Experiment was made in October; And (it may be) in the Spring, the Accelerating would haue beene the speedier. This is a Noble Experiment; For without this helpe, they would haue beene foure times as long in comming vp. But there doth not occurre to me, at this present, any vse thereof, for profit; Except it should be for Sowing of Pease; which haue their Price very much increased, by the early Comming. It may be tried also with Cherries, Strawberries, and other Fruit, which are dearest, when they come early.

There was Wheat, steeped in Water mixed with Cow-Dung; Other in Water mixed with Horse-Dung; Other in Water mixed with Pigeon-Dung; Other in Vrine of Man; Other in Water mixed with Chalke powdred; Other in Water mixed with Soot; Other in Water mixed with Ashes; Other in Water mixed with Bay-Salt; Other in Claret Wine; Other in Malmsey; Other in Spirìt of Wine. The Proportion of the Mixture was, a fourth Part of the Ingredients to the Water; Saue that there was not of the Salt aboue an eighth Part. The Vrine, and Wines, and Spirit of Wine, were Simple without Mixture of Water. The Time of the

Steeping was twelue houres. The Time of the Yeare October. There was also other Wheat sowen vnsteeped, but watred twice a day with Warme water. There was also other Wheat sowen Simple to compare it with the rest. The Euent was; That those that were in the Mixture of Dung, and Vrine, and Soot, Chalke, Ashes, and Salt, came vp within fix dayes: And those that afterwards proued the Highest, Thickest, and most Lustie, were; First the Vrine; And then the Dungs, Next the Chalke; Next the Soot; Next the Ashes; Next the Salt; Next the Wheat Simple of it selfe, vnsteeped, and vnwatered; Next the Watered twice a day with warme water; Next the Claret Wine. So that these three last were slower than the ordinary Wheat of it selfe; And this Culture did rather retard, than aduance. As for those that were steeped in Malmsey, and Spirit of Wine, they came not vp at all. This is a Rich Experiment for Profit; For the most of the Steel pings are Cheape Things; And the Goodnesse of the Crop is a great Matter of Gaine; If the Goodnesse of the Crop answer the Earlinesse of the Comming vp: As it is like it will; Both being from the vigour of the Seed; Which also partly appeared in the Former Experiments, as hath beene said. This Experiment would be tried in other Graines, Seeds, and Kernells: For it may be some Steeping will agree best with some Seeds. It would be tried also with Roots steeped as before, but for longer time. It would be tried also in Seuerall Seasons of the yeare, especially the Spring.

Strawberries watered now and then, (as once in three dayes,) with Water, wherein hath beene steeped Sheepes-dung, or Pigeons-dong, will preuent and come early. And it is like, the same Effect would follow in other Berries, Herbs, Flowers, Graines, or Trees. And therefore it is an Experiment, though vulgar in Strawberries, yet not brought into vse generally: For it is vsuall to helpe the Ground with Mucke; And likewise to Recomfort it sometimes with Mucke put to the Roots; But to water it with Mucke water, which is like to be more Forcible, is not practised.

Dung, or Chalke, or Bloud, applied in Substance, (seasonably,) to the Roots of Trees, doth set them forwards. But to doe it vnto Herbs, without Mixture of Water or Earth, it may be these Helpes are too Hot.

The former Meanes of Helping Germination, are either by the Goodnesse and Strength of the Nourishment; Or by the Comforting, and Exciting the Spirits in the Plant, to draw the Nourishment better. And of this latter kinde, concerning the Comforting of the Spirits of the Plant, arealso the experiments that follow; Though they be not Applications to the Root, or Seed. The Planting of Trees warme vpon a Wall, against the South, or South-East Sunne, doth hasten their Comming on, and Ripening; And the South-East is found to be better than the SouthWest, though the SouthWest be the Hotter Coast. But the cause is chiefly, for that the Heat of the Morning succeedeth the Cold of the Night: and partly, because (many times) the South-west Sunne is too Parching. So likewise the Planting of them vpon the Backe of a Chimney, where a Fire is kept, doth hasten their Comming on, and Ripening: Nay more, the Drawing of the Boughes into the Inside of a Roome, where a Fire is continually kept, worketh the same Effect; Which hath beene tried with Grapes; In so much as they will come a Moneth earlier, than the Grapes abroad.

Besides the two Meanes of Accelerating Germination, formerly described; That is to say, the Mending of the Nourishment; and Comforting of the Spirit of the Plant; there is a Third; Which is the Making way for the Easie Comming to the Nourishment, and Drawing it. And therefore Gentle Digging and Loosening of the Earth about the Roots of Trees; And the Remening Herbs and Flowers into new Earth, once in two yeares, (which is the same thing, For the new Earth is euer looser,) doth greatly further the Prospering, and Earlinesse of Plants.

But the most admirable Acceleration by Facilitating the Nourishment, is that of Water. For a Standard of a Damaske Rose with the Root on, was set in a Chamber, where no Fire was, vpright in an Earthen Pan, full of Faire Water, without any Mixture, halfe a foot vnder the Water, the Standard being more then two foot high aboue the Water: Within the Space of ten dayes, the Standard did put forth a faire Greene lease, and some other little Buds, which stood at a stay, without any Shew of decay or withering, more then seuen Daies. But afterwards that Leafe faded, but the young Buds did sprout on; which afterward opened into faire Leaues, in the space of three Moneths; And continued so a while after, till

vpon Remouall wee left the Triall. But note that the Leaues were somewhat paler, and lighter-coloured, than the Leaues vse to be abroad. Note that the first Buds were in the End of October; And it is likely that if it had beene in the Spring time, it would haue put forth with greater strength, and (it may be) to haue growne on to beare Flowers. By this Meanes, you may haue, (as it seemeth,) Roses set in the middest of a Poole, being supported with some stay; Which is Matter of Rarenesse and Pleasure, though of small Vse. This is the more strange, for that the like Rose-Standard was put, at the same time, into Water, mixed with Horse-dung, the Horse-dung about the fourth Part to the Water, and in foure Moneths space (while it was obserued) put not forth any Leafe, though diuers Buds at the first, as the other.

A Dutch Flower, that had a Bulbous Root, was likewise put, at the same time, all vnder Water, some two or three Fingers deepe; And within seuen dayes sprouted, and continued long after, further Growing. There were also put in, a Beet-Root, a Borrage-Root, and a RaddishRoot, which had al their Leaues cut almost close to the Roots; And within six weekes had faire Leaues; And so continued, till the end of Nouember.

Note that if Roots, or Pease, or Flowers, may be Accelerated in their Comming and Ripening, there is a double Profit; The one in the high Price that those Things beare when they come early: The other in the Swiftnesse of their Returnes: For in some Grounds which are strong, you shall haue a Raddish, &c. come in a Month; That in other Grounds will not come in two; And so make double Returnes.

Wheat also was put into the Water, and came not forth at all; So as it seemeth there must be some Strength and Bulke in the Body, put into the Water, as it is in Roots; For Graines, or Seeds, the Cold of the Water will mortifie. But casually some Wheat lay vnder the Pan, which was somewhat moistned by the Suing of the Pan; which in six weekes (as aforesaid) looked mouldy to the Eye, but it was sprouted forth halfe a Fingers length.

It seemeth by these Instances of Water, that for Nourishment, the Water is almost all in all, and that the Earth doth but keepe the Plant vpright, and saue it

from Ouer-heat, and Ouer-cold; And therefore is a Comfortable Experiment for good Drinkers. It proueth also that our former Opinion; That Drinke incorporate with Flesh, or Roots, (as in Capon-Baere, &c.) will nourish more easily, than Meat and Drinke taken seuerally.

The Nousing of Plants (I conceiue) will both Accelerate Germination, and bring forth Flowers and Plants in the Colder Seasons: And as wee House Hot-Countrey Plants, as Limons, Orenges, Myrtles, to saue them; So we may House our owne Countrey Plants, to forward them, and make them come in the Cold Seasons; In such sort, that you may haue Violets, Strawberries, Pease, all Winter: So that you sow, or remoue them at fit times. This Experiment is to be referred vnto the Comforting of the Spirit of the Plant, by Warmth, as well as Housing their Boughes, &c. So then the Meanes, to Accelerate Germination, are in Particular eight, in Generall three.

To make Roses, or other Flowers come late, it is an Experiment of Pleasure. For the Ancients esteemed much of Rosa Sera. And indeed the Nouember-Rose is the sweetest, hauing beene lesse exhaled by the Sunne. The Meanes are these. First, the Cutting off their Tops, immediately after they haue done Bearing; And then they will come againe the same yeare about Nouember: But they will not come iust on the Tops, where they were cut, but out of those Shoots, which were as it were,) Water-Boughes. The Cause is, for that the Sap, which otherwise would haue fed the Top, (though after Bearing,) will, by the discharge of that, diuert vnto the Side-Sprouts; And they will come to beare, but later.

The Second is the Pulling off the Buds of the Rose, when they are Newly knotted; For then the Side-Branches will beare. The Cause is the same with the former: For Cutting off the Tops, and Pulling off the Buds, worke the same Effect, in Retention of the Sap for a time, and Diuersion of it to the Sprouts, that were not so forward.

The Third is the Cutting off some few of the Top-Roughes in the Spring-time, but suffering the lower Boughes to grow on. The Cause is, for that the Boughes doe helpe to draw vp the Sap more strongly; And we see that in Powling of Trees, many doe vse to leaue a Bough or two on the Top, to helpe to

draw vp the Sap. And it is coparated also, that if you graft vpon the Bough of a Tree, and cut off some of the old Boughes, the new Cions will perish.

The Fourth is by Laying the Roots bare about christmus, some dayes. The Cause is plaine, for that it doth —— the Sap, from going vpwards, for a time; Which Arrest is after wards released by the Couering of the Root a gaine with Earth; And then the Sap getteth vp, but later.

The Fifth is the Re —— of the Tree, some Moneth before it Buddes. The cause is, for that some time will be required after the Re — e, for the Reselting; before it can draw the Iuycs: And that time being lost, the Blossome u — needs some forth later.

The Sixth is the Grasting of Kaser in May, which commonly Gardiners doe not till Inly; And then they beare not till the Next Yeare; But if you graft them in May, they will beare the same yeare, but late.

The Seuenth is, the Girding of the Body of the Tree about with some Pack-threed; For that also, in a degree, restraineth the Sap, and maketh it come vp, more late, and more Slowly.

The Eighth in, the Planting of them — Shade, or in a Hedge; The Cause is, partly the Keeping out of the Sunne, which hasteneth the Sap to rise; And partly the Robbing of them of Nourishment, by the S-uffe in the Hedge. These Meanes may be practised vpon other, both Trees, and Flowers, M10 letters

Men haue entertained a Conceit that sheweth prettily; Namely, that if you grast a Late Comming Fruit, vpon a Stocke of a Fruittree that —— — early, the Graft will beare Fruit Early. At a Peach vpon a Cherry; And contrariwise, if an Early-Comming Fruit vpon a Stocke of a Fruit-Tree that Commeth late, the Grafe will beare Fruit late; As a Cherry vpon a Peach. But these are but Imaginations, and vntrue. The Cause is, for that the Cions ouerroleth the Stocke quite; And the Stocke is but Passue onely, and giueth Aliment, but no Motion to the Graft.

We will speake now, how to make Fruits, Flowers, and Ro-larger; in more plenty; and sweeter; than they vse to be; And how to make the Trees themselues, more Tall; more Spread; and more Hasty and Sudden; than they vse to be.

Wherein there is no doubt, but the former Experiments of Acceleration, will serue much to these Purposes. And againe, that these Experiments, which we shall now set downe, doe serue also for Acceleration; because both Effects proceed from the Encrease of vigour in the Tree, But yet to auoid Confusion; And because some of the Meanes are more proper for the one Effect, and some for the other, wee will handle them apart.

It is an assured Experience, that an Heape of flint, or Stone, laid about the Bottome of a Wilde-Tree, (as an Oake, Elme, Ash, &c.) vpon the first Planting, doth make it prosper double as much, as without it. The Cause is, for that it retaineth the Moisture, which falleth at any time vpon the Tree, and suffereth it not to be exhaled by the Sunne. Againe, it keepeth the Tree warme, from Cold Blasts and Frosts, as it were in an House. It may be also, there is somewhat in the Keeping of it steady at the first. Quare, if Laying of Straw some Height about the Body of a Tree, will not make the Tree forwards. For though the Root giueth the Sap, yet it is the Body that draweth it. But you must note, that if you lay Stones about the stalke of Lettuce, or other Plants, that are more soft, it will ouer-moisten the Roots, so as the Wormes will eat them.

A Tree, at the first Setting, should not be Shaken, vntill it hath taken Root fully: And therefore some haue, put two little Forkes about the Bottome of their Trees, to keepe them vpright; But after a yeares Rooting, then Shaking doth the Tree good, by Loosening of the Earth, and (perhaps) by Exercising (as it were) and Stirring the Sap of the Tree.

Generally, the Cutting away of Boughes and Suckers at the Root and Body, doth make Trees grow high; And contrariwise, the Powling and Cutting of the Top, maketh them grow spread, and bushy. As wee see in Pollards, &c.

It is reported, that to make hasty Growing Coppice-Woods, the way is, to take Willow, Sallow, Poplar, Alder, of some seuen yeares growth; And to set them, not vpright, but a-slope, a reasonable depth vnder the Ground; And then, instead of one Root, they will put forth many, and so carry more Shoots vpon a Stemme.

When you would haue many new Roots of Fruittrees, take a Low Tree, and bow it, and lay all his Branches a-flat vpon the Ground, and cast Earth vpon them; And euery Twigge will take Root. And this is a very profitable Experiment for Costly Trees; (for the Boughtes will make Stockes without charge;) Such as are Apricots, Peaches, Almonds, Cornelians, Mulberries, Figs, &c. The like is continually practised with Vines, Roses, Muske-Roses, &c.

From May to Iuly you may take off the Barke of any Bough, being of the Bignesse of three or foure Inches, and couer the bare Place, somewhat aboue, and below, with Loame well tempered with Horse-dung, binding it fast downe. Then cut off the Bough about Alhollontide in the bare place, and set it in the Ground; And it will grow to be a faire Tree in one Yeare. The Cause may be, for that the Baring from the Barke keepeth the Sap from descending towards Winter, and so holdeth it in the Bough; And it may be also that the Loame and Horse-Dung applied to the bare place, doe moisten it, and cherish it, and make it more apt to put forth the Root. Note, that this may be a generall Meanes for keeping vp the Sap of Trees in their Boughes; Which may serue to other Effects.

It hath beene practised in Trees, that shew faire, and beare not, to Bore a Hole thorow the Heart of the Tree, and thereupon it will beare. Which may be for that the Tree before had too much Repletion, and was oppressed with his owne Sap; For Repletion is an Enemy to Generation.

It hath beene practised in Trees, that doe not beare, to cleaue two or three of the Chiese Roots, and to put into the Cleft a small Pebble, which may keepe it open, and then it will beare. The Cause may be, for that a Root of a Tree may be (as it were,) Hide-bound, no lesse than the Body of the Tree; But it will not keepe open without somewhat put into it.

It is vsually practised, to set Trees that require much Sunne, vpon Walls against the South; As Apricots, Peaches, Plums, Vines, Figs, and the like. It hath a double Commodity; The one, the Heat of the Wall by Reflexion; The other, the Taking away of the Shade; For when a Tree groweth round, the vpper Boughes ouer-shadow the lower; But when it is spread vpon a Wall, the Sunne commeth alike, vpon the vpper, and lower Branches.

It hath also beene practised (by some) to pull off some Leanes from the Trees so spread, that the Sunne may come vpon the Bough and Fruit the better. There hath beene practised also a Curiosity, to set a Tree vpon the North-Side of a Wall, and at a little height, to draw him thorow the Wall, and spread him vpon the South-Side: Conceiuing that the Root and lower Part of the Stocke should enioy the Freshnesse of the Shade; And the Vpper Boughes, and Fruit, the Comsort of the Sunne. But it sorted not; The Cause is, for that the Root requireth some Comsort from the Sunne, though vnder Earth, as well as the Body: And the Lower Part of the Body more than the Vpper, as wee see in Compassing a Tree below with Straw.

The Lownesse of the Bough, where the Fruit commeth, maketh the Fruit greater, and to ripen better; For you shall euer see in Apricots, Peaches, or Melo-Cotones, vpon a wall, the greatest Fruits towards the Bottome. And in France the Grapes that make the Wine, grow vpon low Vines, bound to small Stakes. And the raised Vines in Arbours make but Veriuyce. It is true, that in Italy, and other Countries, where they haue hotter Sunne, they raise them vpon Elmes, and Trees; But I conceiue, that if the French Manner of Planting low, were brought in vse there, their Wines would be stronger and sweeter. But it is more chargeable in respect of the Props. It were good to try whether a Tree grafted somewhat neare the Ground, and the lower boughes onely maintained, and the higher continually proined off, would not make a larger Fruit.

To haue Fruit in Greater Plenty, the way is, to graft, not onely vpon young Stockes, but vpon diuers Boughes of an old Tree; for they will beare great Numbers of Fruit; Whereas if you graft but vpon one Stocke, the Tree can beare but few.

The Digging yearely about the Roots of Trees, which is a great means, both to the Acceleration and Melioration of Fruits, is practised in nothing but in Vines; Which if it were transferred vnto other Trees, and Shrubs, (as Roses, &c.) I conceiue would aduance them likewise.

It hath beene knowne, that a Fruit-Tree hath beene blowne vp (almost) by the Roots, and set vp againe, and the next yeare bare exceedingly. The Cause of this,

was nothing but the Looseming of the Earth, which comforteth any Tree, and is fit to be practised, more than it is, in Fruit-Trees: For Trees cannot be so fitly remoued into New Grounds, as Flowers and Herbs may.

To reuiue an Old Tree, the Digging of it about the Roots, and Applying new Mould to the Roots, is the way. We see also that DraughtOxen, put into fresh Pasture, gather new and tender Flesh; And in all Things, better Nourishment than hath beene vsed, doth helpe to renew; Especially, if it be not onely better, but changed, and differing from the former.

If an Herbe be cut off from the Roots, in the beginning of Winter, and then the Earth be troden and beaten downe hard, with the Foot and Spade, the Roots will become of very great Magnitude in Summer. The Reason is, for that the Moisture being forbidden to come vp in the Plant, stayeth longer in the Root, and so dilateth it. And Gardiners vse to tread downe any loose Ground, after they haue sowne Onions, or Turnips, &c.

If Panicum be laid below, and about the Bottome of a Root, it will cause the Root to grow to an Excessiue Bignesse. The Cause is, for that being it selfe of a Spungy Substance, it draweth the Moisture of the Earth to it, and so feedeth the Root. This is of greatest vse for Onions, Turnips, Parsnips, and Carrets.

The Shifting of Ground is a Meanes to better the Tree, and Fruit; But with this Caution; That all Things doe prosper best, when they are aduanced to the better: Your Nursery of Stockes ought to be in a more Barren Ground, than the Ground is whereunto you remoue them. So all Grasiers preferre their Cattell from meaner Pastures to better. We see also, that Hardnesse in Youth lengthneth Life, because it leaueth a Cherishing to the better, of the Body, in Age: Nay in Exercises, it is good to begin with the hardest, as Dancing in Thicke Shooes, &c.

It hath beene obserued, that Hacking of Trees in their Barke, both downe-right, and acrosse, so as you make them rather in slices, than in continued Hacks, doth great good to Trees; And especially deliuereth them from being Hide-bound, and killeth their Mosse.

Shade to some Plants conduceth to make them large, and prosperous, more than Sun; As in Strawberries, and Bayes, &c. Therefore amongst Strawberries,

sow here and there some Barrage-Seed; And you shall finde the Strawberries vnder those Leaues farro more large than their Fellowes. And Bayes you must plant to the North; Or defond them from the Sunne by a Hedge-Row; And when you sow the Berries, weed not the Borders, for the first halfe yeare; For the Weed giueth them Shade.

To increase the Crops of Ph — , there would be considered, not only the Increasing the Lust of the Earth, or of the Plant, but the Sauing also of that which is spilt. So they haue lately made a Triall, to Set Wheat; which neuerthelesse hath beene left off, because of the trouble and paines; Yet so much is true, that there is much saued by the Setting, in comparison of that which is Sewen; Both by keeping it from being picked vp by Birds; And by Auoiding the Shallow lying of it, whereby much that is sowen taketh no Root.

It is prescribed by some of the Ancients, that you take Small Trees, vpon which Figs or other Fruit grow, being yet vnripe, and couer the Trees in the Middle of Autamne with dung, vntill the Spring; And then take them vp in a warme day, and replant them in good Ground; And by that meanes, the former yeares Tree will be ripe, as by a new Birth; when other Trees of the fame kinde, doe but blossome. But this seemeth to haue no great Probabilitie.

It is reported, that if you take Nitre, and mingle it with Water, to the thicknesse of Honey, and therewith anoint the Bud, after the Vine is cut, it will sprout forth within eight dayes. The Cause is like to be, (if the Experiment be true,) the Opening of the Bud, and of the Parts Contiguous, by the Spirit of the Nitre; For Nitre is (as it were) the Life of Vegetables.

Take Seed, or Kernells of Apples, Peares, Orenges; Or a Peach, or a Plum Stone, &c. And put them into a Squill, (which is like a great Onion,) and they will come vp much earlier than in the Earth it selfe. This I conceiue no be as a Kinde of Grafting in the Root; For as the Stocke of a Graft yeeldeth better prepared Nourishment to the Graft, than the Crude Earth; So the Squill doth the like to the Seed. And I suppose the same would be done, by Putting Kernells into a Turnip, or the like; Saue that the Squill is more Vigorous, and Hot. It may be

tried also, with putting Onion-Seed into an Onion-Head, which thereby (perhaps) will bring forth a larger, and earlier Onion.

The Pricking of a Fruit in seuerall places, when it is almost at his Bignesse, and before it ripeneth, hath beene practised with successe, to ripen the Fruit more suddenly. Wee see the Example of the Biting of Waspes, or Wormes, vpon Fruit, whereby it (manifestly) ripeneth the sooner.

It is reported, that Alga Marina (Sea-weed) put vnder the Roots of Coleworts, and (perhaps) of other Plants, will further their Growth. The vertue (no doubt) hath Relation to Salt, which is a great Helpe to Fertilitie.

It hath beene practised, to cut off the Stalkes of Cucumbers, immediately after their Bearing, close by the Earth; And then to cast a prettie Quantitie of Earth vpon the Plant that remaineth; and they will beare the next yeare Fruit, long before the ordinary time. The Cause may be, for that the Sap goeth downe the sooner, and is not spent in the Stalke or Lease, which remaineth after the Fruit. Where note, that the Dying, in the winter, of the Roots of Plants, that are Annuall, seemeth to be partly caused by the Ouer-Expence of the Sap into Stalke, and Leaues; which being preuented, they will super-annate, if they stand warme.

The Pulling off many of the Blossomes from a Fruit-Tree, doth make the Fruit fairer. The Cause is manifest; For that the Sap hath the lesse to nourish. And it is a Common Experience, that if you doe not pull off some Blossomes, the first time a Tree bloometh, it will blossome it selfe to death.

It were good to trie, what would be the Effect, if all the Blossomes were pulled from a Fruit-Tree; Or the Acornes and Chesnut-buds, &c. from a Wilde Tree, for two yeares together. I suppose that the Tree will either put forth, the third yeare, bigger, and more plentifull Fruit; Or else, the same yeares, larger Leaues, because of the Sap stored vp.

It hath beene generally receiued, that a Plant Watered with Warme Water, will come vp sooner and better, than with Cold Water, or with Showers. But our Experiment of Watering Wheat with Warme Water (as hath beene said) succeeded not; which may be, because the Triall was too late in the Yeare, vix.

in the End of October. For the Cold then comming vpon the Seed, after it was made more tender by the Warme Water, might checke it.

There is no doubt, but that Grafting (for the most Part) doth meliorate the Fruit. The Cause is manifest; For that the Nourishment is better prepared in the Stocke, than in the Crude Earth: But yet note well, that there be some Trees, that are said to come vp more happily from the Kernell, than from the Graft; As the Peach, and Melocotone. The Cause I suppose to he, for that those Plants require a Nourishment of great Moisture; And though the Nourishment of the Stocke be finer, and better prepared, yet it is not so moist, and plentifull, as the Nourishment of the Earth. And indeed we see those Fruits are very Cold Fruits in their Nature.

It hath beene receiued, that a Smaller Peare, grafted vpon a Stocke that beareth a greater Peare, will become Great. But I thinke it is as true, as that of the Prime-Fruit vpon the Late Stocke; And è conuerso; which we reiected before: For the Cions will gouerne. Neuerthelesse it is probable enough, that if you can get a Cions to grow vpon a Stocke of another kinde, that is much moister than his owne Stocke, it may make the Fruit Greater, because it will yeeld more plentifull nourishment; Though it is like it will make the Fruit Baser. But generally, the Grafting is vpon a dryer Stock; As the Apple vpon a Crab; The Peare vpon a Thorne; &c. Yet it is reported, that in the Low-Conntries they will graft an Apple-Cions vpon the Stocke of a Colewort, and it will beare a great flaggy Apple: The Kernell of which, if it be set, will be a Colewort, and not an Apple. It were good to try, whether an Apple-Cions will prosper, if it be grafted vpon a Sallow, or vpon a Poplar, or vpon an Alder, or vpon an Elme, or vpon an Horse-Plumme, which are the moistest of Trees. I haue heard that it hath beene tryed vpon an Elme, and succeeded.

It is manifest by Experience, that Flowers Remoued wax greater, because the Nourishment is more easily come by, in the loose Earth. It may be, that Oft Regrafting of the same Cions, may likewise make Fruit greater; As if you take a Cions, and graft it vpon a Stocke the first yeare; And then cut it off, and graft it

vpon another Stocke the second yeare; and so for a third; Or fourth yeare; And then let it rest, it will yeeld afterward, when it beareth, the greater Fruit.

Of Grafting there are many Experiments worth the Noting, but those we reserue to a proper Place.

It maketh Figs better, if a Fig-Tree, when it beginneth to put forth Leaues, haue his Top cut off. The Cause is plaine, for that the Sap hath the lesse to seed, and the lesse way to mount: But it may be, the Figge will come somewhat later, as was formerly touched. The same may be tried likewise in other Trees.

It is reported, that Mulberries will be fairer, and the Trees more fruitfull, if you bore the Truncke of the Tree thorow, in seuerall places, and thrust into the Places bored, Wedges of some Hot Trees, as Turpentine, Mastick-Tree, Guaiacum, Inniper, &c. The Cause may be, for that Aduentiue Heat doth cheare vp the Natiue Iuyce of the Tree.

It is reported, that Trees will grow greater, and beare better Fruit, if you put Salt, or Lees of Wine, or Bloud to the Root. The Cause may be the Encreasing the Lust or Spirit of the Root; These Things being more forcible, than ordinary Composts.

It is reported by one of the Ancients, that Artichoakes will be lesse prickly, and more tender; if the Seeds haue their Tops dulled, or grated off vpon a Stone.

Herbes will be tenderer, and fairer; if you take them out of Beds, when they are newly come vp, and remoue them into Pots, with better Earth. The Remoue from Bed to Bed was spoken of before; But that was in seuerall yeares; This is vpon the sudden. The Cause is the same with other Remoues, formerly mentioned.

Coleworts are reported by one of the Ancients, to prosper exceedingly, and to be better tasted, if they be sometimes watred with Salt-Water; And much more with Water mixed with Nitre; The Spirit of which is lesse Adurent than Salt.

It is reported, that Cucumbers will proue more Tender, and Dainty, if their Seeds be Steeped (a little) in Milke; The Cause may be, for that the Seed being mollified with the Milke, will be too weake to draw the grosser Iuyce of the Earth, but onely the finer. The same Experiment may be made in Artichoakes,

and other Seeds, when you would take away, either their Flashinesse, or Bitternesse. They speake also, that the like Effect followeth, of Steeping in Water mixed with Honey; But that seemeth to me not so probable, because Honey hath too quicke a Spirit.

It is reported that Cucumbers will be lesse Watry, and more Melonlike, it in the Pit where you set them, you fill it (halfe way vp) with Chaffe, or small Stickes, and then powre Earth vpon them; For Cucumbers, as it seemeth, doe extremely affect Moisture; And ouer-drinke themselues; Which this Chaffe, or Chips, forbiddeth. Nay it is further reported, that if when a Cucumber is growne, you fet a Pot of water about fiue or six inches distance from it, it will, in 24, houres, shoot so much out, as to touch the Pot; Which if it be true, it is an Experiment of an higher Nature than belongeth to this Title: For it discouereth Perception in Plants, to moue towards that which should helpe and comfort them, though it be at a distance. The ancient Tradition of the Vine is far more strange: It is, that if you set a Stake, or Prop, some distance from it, it will grow that way; Which is farre stranger (as is said) than the other; For that Water may worke by a Sympathy of Attraction: But this of the Stake seemeth to be a Reasonable Discourse.

It hath beene touched before, that Terebration of Trees doth make them prosper better. But it is found also, that it maketh the Fruit sweeter, and better. The Cause is, for that notwithstanding the Terebration, they may receiue Aliment sufficient; And yet no more than they can well turne, and disgest; And withall doe sweat out the coursest and vnprofitablest Iuyce; Euen as it is in Lining Creatures, which by Moderate Feeding, and Exercise, and Sweat, attaine the soundest Habite of Body.

As Terebration doth Meliorate Fruit, so, vpon the like reason, doth Letting of Plants Blond; As Pricking Vines, or other Trees, after they be of some Growth; And thereby letting forth Gumme, or Teares; Though this be not to continue, as it is in Terebration, but at some Seasons. And it is reported, that by this Artifice, Bitter Almonds haue beene turned into Sweet.

The Ancients for the Dulcorating of Fruit, doe commend SwinesDung aboue all other Dung; Which may be, because of the Moisture of that Beast, whereby the Excrement hath lesse Acrimony; For wee see Swines and Pigges Flesh is the Moistest of Fleshes.

It is obserued by some, that all Herbs wax sweeter, both in Smell and Taste, if after they be growne vp some reasonable time, they be cut, and so you take the latter Sprout. The Cause may be, for that the longer the Iuyce stayeth in the Root, and Stalke, the better it concocteth. For one of the Chiefe Causes, why Graines, Seeds, and Fruits, are more Nourishing than Leanes, is the Length of time, in which they grow to Maturation. It were not amisse to keepe backe the Sap of Herbs, or the like, by some fit meanes, till the end of Summer; whereby (it may be) they will be more Nourishing.

As Grafting doth generally aduance and Meliorate Fruits, aboue that which they would be, if they were set of Kernells, or Stones, in regard the Nourishment is better concocted; So (no doubt) euen in Grafting, for the same cause, the Choise of the Stocke doth much; Alwayes prouided, that it be somewhat inferiour to the Cions: For otherwise it dulleth it. They commend much the Grafting of Peares, or Apples, vpon a Quince.

Besides the Meanes of Melioration of Fruits, before mentioned, it is set downe as tryed, that a Mixture of Bran, and SwinesDung; Or Chaffe and SwinesDung; (especially laid vp together for a Moneth to rot,) is a very great Nourisher, and Comforter to a Fruit-Tree.

It is deliuered, that Onions wax greater, if they be taken out of the Earth, and laid a drying twenty dayes, and then set againe; And yet more, if the outermost Pill be taken off all ouer.

It is deliuered by some, that if one take the Bough of a Low Fruittree, newly budded, and draw it gently, without hurting it, into an Earthen Pot perforate at the bottome to let in the Plant, and then Couer the Pot with Earth, it will yeeld a very large Fruit, within the Ground. Which Experiment is Nothing but Potting of Plants, without Remouing, and Leauing the Fruit in the Earth. The like, (they say,) will be effected, by an Empty Pot without Earth in it, put ouer a Fruit,

being propped vp with a Stake, as it hangeth vpon the Tree; And the better, if some few Pertusions be made in the Pot. Wherein, besides the Defending of the Fruit, from Extremity of Sunne or Weather, some giue a reason, that the Fruit, Louing and Coueting the open Aire and Sunne, is inuited by those Pertusions, to spread and approch, as neare the open Aire, as it can; And so enlargeth in Magnitude.

All Trees, in High and Sandy Grounds, are to be set deepe; And in Watry Grounds, more shallow. And in all Trees, when they be remoued (especially Fruit-Trees) care ought to be taken, that the Sides of the Trees be coasted, (North and South, &c.) as they stood before. The same is said also of Stone out of the Quarry, to make it more durable; Though that seemeth to haue lesse reason; Because the Stone lyeth not so neare the Sunne, as the Tree groweth.

Timber Trees in a Coppice Wood, doe grow better, than in an Open Field; Both because, they offer not to spread so much, but shoot vp still in Height; And chiefly because they are defended from too much Sun and Wind, which doe checke the Growth of all Fruit; And so (no doubt) Fruit-Trees, or Vines, set vpon a Wall, against the Sunne, betweene Elbowes or Buttresses of Stone, ripen more, than vpon a Plaine Wall.

It is said, that if Potado Roots, be set in a Pot filled with Earth, and then the Pot with Earth be set likewise within the Ground, some two or three Inches, the Roots will grow greater, than Ordinary. The Cause may be, for that Hauing Earth enough within the Pot to nourish them; And then being stopped by the Bottom of the Pot from putting Strings downward, they must needs grow greater in Breadth, and Thicknesse. And it may be, that all Seeds or Roots, Potted, and so set into the Earth, will prosper the better.

The Cutting off the Leaues of Radish, or other Roots, in the beginning of Winter, before they wither; And Couering againe the Root, something high with Earth; Will preserue the Root all Winter, and make it bigger, in the Spring following, as hath beene partly touched before. So that there is a double Vse of this Cutting off the Leaues: For in Plants, where the Root is the Esculent, as Radish, and Parsnips, it will make the Root the greater: And so it will doe to the

Heads of Onions. And where the Fruit is the Esculent, by Strengthning the Root, it will make the Fruit also the greater.

It is an Experiment of great pleasure, to make the Leaues of Shady Trees, larger than ordinary. It hath beene tryed (for certaine) that a Cions of a Weech-Elme, grafted vpon the Stocke of an Ordinary Elme, will put forth Leaues, almost as broad as the Brimme of ones Hat. And it is very likely, that as in Fruit-Trees, the Graft maketh a greater Fruit; So in Trees that beare no Fruit, it will make the greater Leaues. It would be tryed therefore in Trees of that kinde chiefly; As Birch, Asp, Willow; And especially the Shining Willow, which they call Swallow-Taile, because of the pleasure of the Leafe.

The Barrennesse of Trees, by Accident, (besides the Weaknesse of the Soile, Seed, or Root; And the Iniury of the Weather) commeth either of their Ouer-growing with Mosse, Or their being Hide-bound; Or their Planting too deepe; Or by Issuing of the Sap too much into the Leaues. For all these there are Remedies mentioned before.

Wee see that in Liuing Creatures, that haue Male and Female, there is Copulation of seuerall Kindes; And so Compound Creatures; As the Mule, that is generated betwixt the Horse and the Asse; And some other Compounds, which we call Monsters, though more rare: And it is held, that that Prouerbe, Africa semper aliquid Monstri parit; commeth, for that the Fountaines of Waters there, being rare, diuers Sorts of Beasts come from seuerall Parts to drinke; And so being refreshed, fall to couple, and many times with seuerall Kinds. The Compounding or Mixture of Kinds in Plants is not found out; Which neuerthelesse, if it be possible, is more at command, than that of liuing Creatures; For that their Lust requireth a voluntary Motion: wherefore it were One of the most Noble Experiments touching Plants, to finde it out: For so you may haue great Varietie of New Fruits, and Flowers yet vnknowne. Grafting doth it not: That mendeth the Fruit, or doubleth the Flowers, &c. But it hath not the Power to make a New Kinde. For the Cions euer ouer-ruleth the Stocke.

It hath beene set downe by one of the Ancients, that if you take two Twigs of seuerall Fruit Trees, and flat them on the Sides, and then binde them close

together, and set them in the ground, they will come vp in one Stocke; But yet they will put forth their seuerall Fruits, without any Commixture in the Fruit. Wherein note (by the way) that Vnitie of Continuance, is easier to procure, than Vnitie of Species. It is reported also, that Vines of Red and White Grapes, being set in the Ground, and the vpper Parts being flatted, and bound close together, will put forth Grapes of the seuerall Colours, vpon the same Branch; And Grape-Stones of seuerall Colours within the same Grape: But the more, after a yeare or two; The Vnitie (as it seemeth) growing more Perfect. And this will likewise helpe, if from the first Vniting, they be often Watred; For all Moisture helpeth to Vnion. And it is prescribed also, to binde the Bud, as soone as it commeth forth, as well as the Stocke; At the least for a time.

They report, that diuers Seeds, put into a Clout, and laid in Earth well dunged, will put vp Plants Contiguous; Which (afterwards) being bound in, their Shoots will Incorporate. The like is said of Kernels, put into a Bottle, with a Narrow Mouth, filled with Earth.

It is reported, that young Trees of seuerall kindes, set contiguous, without any binding, and very often Watred, in a Fruitfull Ground, with the very Luxurie of the Trees will incorporate, and grow together. Which seemeth to me the likeliest Meanes, that hath beene propounded; For that the Binding doth hinder the Naturall Swelling of the Tree; which, while it is in Motion, doth better vnite.

There are many Ancient and Receiued Traditions and Obseruations, touching the Sympathy and Antipathy of Plants: For that some will thriue best growing neere others; which they impute to Sympathy: And some worse; which they impute to Antipathy. But these are Idle and Ignorant Conceits; And forsake the true Indication of the Causes; As the most Part of Experiments, that concerne Sympathies and Antipathies doe. For as to Plants, neither is there any such Secret Friendship, or Hatred, as they imagine; And if we should be content to call it Sympathy, and Antipathy, it is vtterly mistaken; For their Sympathy is an Antipathy, and their Antipathy is a Sympathy: For it is thus; Wheresoeuer one Plant draweth such a particular Iuyce out of the Earth; as it qualifieth the Earth; So as that Iuyce which remaineth is fit for the other Plant, there the

Neighbourhood doth good; Because the Nourishments are contrary, or seuerall: But where two Plants draw (much) the same Iuyce, there the Neighbourhood hurteth; For the one deceiueth the other.

First therfore, all Plants that doe draw much Nourishment from the Earth, and so soake the Earth, and exhaust it; hurt all Things that grow by them; As Great Trees, (especially Ashes,) and such Trees, as spread their Roots, neere the Top of the Ground. So the Colewort is not an Enemy (though that were anciently receiued) to the Vine only; But it is an Enemy to any other Plant; Because it draweth strongly the fattest Iuyce of the Earth. And if it be true, that the Vine, when it creepeth neere the Colewort, will turneaway; This may be, because there it findeth worse Nourishment; For though the Root be where it was, yet (I doubt) the Plant will bend as it nourisheth.

Where Plants are of seuerall Natures, and draw seuerall Iuyces out of the Earth, there (as hath beene said) the One set by the other helpeth: As it is set downe by diuers of the Ancients, that Rew doth prosper much, and becommeth stronger, if it be set by a Figge-Tree: which (we conceiue) is caused, Not by Reason of Friendship, but by Extraction of a Contrary Iuyce: The one Drawing Iuyce fit to result Sweet, the other bitter. So they haue set downe likewise, that a Rose set by Garlicke is sweeter: Which likewise may be, because the more Fetide Iuyce of the Earth goeth into the Garlicke; And the more Odorate into the Rose.

This wee see manifestly, that there be certaine Corne-Flowers, which come seldome or neuer in other places, vnlesse they be set; But onely amongst Corne: As the Blew-Bottle, a kinde of Yellow Mary Gold, Wilde Poppy, and Fumitorie. Neither can this be, by Reason of the Culture of the Ground, by Plowing, or Furrowing; As some Herbs, and Flowers, will grow but in Ditches new Cast; for if the Ground lie sallow, and vnsowne, they will not come: So as it should seeme to be the Corne, that qualifieth the Earth, and prepareth it for their Growth.

This Obseruation, if it holdeth, (as it is very probable,) is of great vse, for the Meliorating of Taste in Fruits, and Esculent Herbs; And of the Sent of Flowers. For I doe not doubt, but if the Figge-Tree doe make the Rew more strong, and

bitter, (as the Ancients haue noted,) good store of Rew planted about the Figge-Tree, will make the Figge more sweet. Now the Tastes that doe most offend in Fruits, and Herbs, and Roots, are Bitter; Harrish; Sowre; And Watrish, or Flashy. It were good therefore to make the Trials following.

Take Wormewood, or Rew, and set it neere Lettuce, or Goleflory, or Arti-hoake; And see whether the Lettuce, or the Coleflory, &c. become not the sweeter.

Take a Seruice-Tree, or a Cornelian-Tree, or an Elder-Tree, which wee know haue Fruits of harsh and binding Iuyce, and set them neere a Vine, or Figge-Tree, and see whether the Grapes, or Figs, will be the sweeter.

Take Cucumbers, or Pumpions, and set them (here and there) amongst Muske-Melons, and see whether the Melons will not be more Winy, and better tasted. Set Cucumbers (likewise) amongst Radish, and see whether the Radish will not be made the more Biting.

Take Sorrell, and set it amongst Rosps, and see whether the Rasps will not be the sweeter.

Take Common Briar, and set it amongst Violets, or Wall-Flowers, and see whether it will not make the Violets, or Wall-Flowers sweeter, and lesse Earthy in their Smell. So set Lettuce, or Cucumbers, amongst Rosemary, or Bayes, and see whether the Rosemary, on Bayes, will not be the more Odorate, or Aromaticall.

Contrariwise, you must take heed, how you set Herbs together, that draw much the like Iuyce. And therefore I thinke Rosemary will leese in Sweetnesse, if it be set with Lauender, or Bayes, or the like. But yet, if you will correct the strength of an Herbe, you shall doe well to set other like Herbs by him, to take him downe; As if you should set Tansey by Angelica, it may be, the Angelica would be the weaker, and fitter for Mixture in Perfume. And if you should set Rew by Common Wormewood, it may be, the Wormewood would turne to be like Roman Worniewood.

This Axiome is of large extent; And therefore would be seuered, and refined by Triall. Neither must you expect to haue a Grasse Difference by this kinde of

Culture, but only Further Perfection.

Triall would be also made in Herbs Poisonous, and Purgatine, whose ill Qualitie (perhaps) may be discharged, or attempted, by Setting stronger Poisons; or Purgatines, by them.

It is reported, that the Shrub called Our Ladies Seale; (which is a Kinde of Briony,) and Coleworts, set neere together, one or both will die. The Cause is, for that they be both great Depredatours of the Earth, and one of them starueth the other. The like is said of a Reed, and a Brake; Both which are succulent; And therefore the One deceiueth the Other. And the like of Hemlocke and Rew; Both which draw strong luyces.

Some of the Ancients, and likewise diures of the Moderne Writers, that haue laboured in Natural Magicke, haue noted a Sympathy, between the Sunne, Moone, and some Principall Starres; And certaine Herbs, and Plants. And so they haue denominated some Herbs Solar, and some Lunar; And such like Toyes put into great Words. It is manifest, that there are some Flowers, that haue Respect to the Sunne, in two Kindes; The one by Opening and Shutting; And the other by Bowing and Inclining the Head. For Mary-golds, Tulippa's, Pimper-ell, and indeed most Flowers, doe open or spread their Leaues abroad, when the Sunne shineth serene and faire: And againe, (in some part,) close them, or gather them inward, either towards Night, or when the Skie is ouercast. Of this there needeth no such Solemne Reason to be assigned; As to say, that they reioyce at the presence of the Sunne; And mourne at the Absence thereof. For it is Nothing else, but a little Loading of the Leaues, and Swelling them at the Bottome, with the Moisture of the Aire; whereas the drie Aire doth extend them: And they make it a Peece of the wonder, that Garden Clauer will hide the Stalke, when the Sunne sheweth bright; Which is Nothing, but a full Expansion of the leaues. For the Bowing and Inclining the Head; it is found in the great Flower of the Sunne; in Mary-golds; Wart wort; Mallow Flowers; and others. The Cause is somewhat more Obscure than the former; But I take it to be no other, but that the Part against which the Sunne beateth, waxeth more faint and flaccide in the Stalke; And thereby lesse able to support the Flower.

What a little Moisture will doe in Vegetables, euen though they be dead, and seuered from the Earth, appeareth well in the Experiment of Inglers. They take the Beard of an Oate; which (if you marke it well,) is wreathed at the Bottome, and one smooth entire Straw at the Top. They take only the Part that is Wreathed, and cut off the other, leauing the Beard halfe the Breadth of a finger in length. Then they make a little Crosse of a Quill, long-wayes of that Part of the Quill, which hath the Pith; And Crosse-wayes of that peece of the Quill without Pith; The whole Crosse being the Breadth of a Finger high. Then they pricke the Bottome where the Pith is, and thereinto they put the Oaten-beard, leauing halfe of it sticking forth of the Quill: Then they take a little white Box of wood, to deceiue Men, as if somewhat in the Box did worke the Feat: In which, with a Pinne, they make a little Hole, enough to take the Beard, but not to let the Crosse sinke downe, but to sticke. Then likewise by way of Imposture, they make a Question; As, Who is the Fairest Woman in the Company? Or, Who hath a Gloue, or Card? And canse Another to name diners Persons: And vpon euery Naming, they sticke the Crosse in the Box, hauing first put it towards their Mouth, as if they charmed it; And the Crasse stirreth not; But when they come to the Person that they would take; As they hold the Orasse to their Mouth, they touch the Beard with the Tip of their Tongue, and wet it; And so sticke the Crosse in the Box; And then you shall see it turne finely and softly, three or foure Turnes; Which is caused by the vntwining of the Beard by the Moisture. You may see it more euidently, if you sticke the Crosse betweene your fingers, in Stead of the Box; And therfore you may see, that this Motion, which is effected by so little Wet, is stronger than the Closing or Bending of the Head of a Marigold.

It is reported by some, that the Herb called Rosa-Solis, (wherof they make Strong Waters,) will at the Noone-day, when the Sunne shineth hot and bright, haue a great Dew vpon it. And therefore, that the right Name is Ros Solis: which they impute to a Delight and Sympathy, that it hath with the Sunne. Men fauour Wonders. It were good first to be sure, that the Dew that is found vpon it, be not the Dew of the Morning Preserued, when the Dew of other Herbs is breathed

away; for it hath a smooth and thicke Leafe, that doth not discharge the Dew so soone, as other Herbs that are more Spungy and Porous. And it may be Purslane, or some other Herb, doth the like, and is not marked. But if it be so, that it hath more Dew at Noone, than in the Morning, then sure it seemeth to be an Exudation of the Herb is solfe. As Plums sweat when they are set into the Ouen: for you will not (I hope) thinke, that it is like Gedeons Fleeel of Wood, that the Dew should fail vpon that, and no where else.

It is certaine, that the Honey-dews are found more vpon Oahe-le — es, than vpon A — of Beech, or the like: But whether any Cause be, from the Leafe it selfe, to concoct-the Dew, Or whether it be onely, that the Leafe is Close and Smooth; (And therefore drinketh not in the Dew, but preserueth it;) may be doubted. It would be well inquired, whether Ma — the Drug, doth fall but vpon certaine Herbs or L — onely. Flowers that haue deepe Sockets, doe gather in the Bottome, a kinde of Honey; As Honey-Suckles; (both the Woodbine, and the Trisoile;) Dillier; and the like. And in them certainly the Flower beareth part with the Dew.

The Experience is, that the Froth, which they call Woodsears, (being like a kinde of Spittle,) is found but vpon certaine Herbs, and those Hot Ones; As Lauender-cotton, Sage, Hissope, &c. Of the Cause of this enquire further; For it seemeth a Secret. There falleth also Mildew vpon Corne, and smutteth it; But it may be, that the same salleth also vpon other Herbs, and is not obserued.

It were good, Triall were made, whether the great Consent betweene Plants and Water, which is a principall Nourishment of them; will make an Attraction or Distance, and not at Touch onely. Therfore take a Vessell, and in the middle of it make a false Bottome of course Can — affe: Fill it with E — aboue the Canuaffey and let not the Bar-h be wa-ed; Then sow some good Seeds in that Earth, But — the Canuaffe, some halfe a foot in the Bottome of the Vessell, lay a great Sp — ge, th — owly wet in water; And let it lye so some ten Dayes. And see whether the Seeds will sprout, and the Earth become more Moist, and the Spunge more dry. The Experiment formerly mentioned of the Cucumber, creeping to the Pot of Water, is far stranger than this.

The Altering of the Sent, Colour, or Taste, of Fruit, by Infusing, Mixing, or Letting into the Barke, or Rost, of the Tree, Herb, or Flower, any Coloured, Aromaticall, or Medicinall; Substance; are but Fancies. The Cause is, for that those Things haue passed their Period, and nourish not. And all Alteration of Vegetables, in those Qualitles, must be by somewhat, that is apt to goe into the Nourishment of the Plant. But this is true; that where Kine feed vpon Wilde Garlicke, their Milke tasteth plainly of the Garlicke: And the Flesh of Muttons is better tasted where the Sheepe feed vpon Wilde Thyme, and other wholesome Herbs. Galen also speaketh of the Curing of the Scirrus of the Liuer, by Milke of a Cow, that feedeth but vpon certaine Herbs; And Honey in Spaine smelleth (apparently) of the Rosemary, or Orenge, from whence the Bee gathereth it: And there is an old Tradition of a Mayden that was fed with Napellus; (which is counted the Strongest Poyson of all Vegetables;) which with vse did not hurt the Maid, but poisoned some that had Carnall Company with her. So it is obserued by some, that there is a vertuous Bexoar, and another without vertue; which appeare to the shew alike; But the Vertuous is taken from the Beast, that feedeth vpon the Mountaines, where there are Theriacall Herbs; And that without Vertue; from those that feed in the Valleyes, where no such Herbs are. Thus far I am of Opinion; That as Steeped Wines and Beeres, are very Medicinall; and likewise Bread tempred with diuers Powders; So of Meat also, (as Flesh, Fish, Milke, and Egges,) that they may be made of great vse for Medicine, and Diet, if the Beasts, Fowle, or Fish, be fed with a speciall kinde of food, fit for the Disease. It were a dangerous Thing also for secret Empoysonthents. But whether it may be applyed vnto Plants, and Herbs. I doubt more; Because the Nourishment of them is a more common Iuyce; which is hardly capable of any speciall Quality, vntill the Plant doe assimilate it.

But lest our Incredulity may preiudice any profitable Operations in this kind, (especially since Many of the Ancients haue set them down,) We thinke good briefly to propound the foure Meanes, which they haue deuised of Making Plants Medicinable. The First is by Slitting of the Root, and Infusing into it the Medicine; As Hellebore, Opium, Scammony, Triacle, &c. And then binding it vp

againe. This seemeth to me the least probable; Because the Root draweth immediately from the Earth; And so the Nourishment is the more Common, and lesse Qualified: And besides, it is a long time in Going vp, ere it come to the Fruit. The Second Way is, to Perforate the Body of the Tree, and there to Infuse the Medicine: Which is somewhat better: For if any Vertue be receiued from the Medicine, it hath the lesse way, and the lesse time, to goe vp. The Third is, the Steeping of the Seed or Kernell in some Liquour, wherein the Medicine is Infused: Which I haue little Opinion of, because the Seed, (I doubt,) will not draw the Parts of the Matter, which haue the Propriety: But it will be farre the more likely, if you mingle the Medicine with Dung; For that the Seed naturally drawing the Moisture of the Dung, may call in withall some of the Propriety. The fourth is, the Watring of the Plant oft, with an Infusion of the Medicine. This, in one respect, may haue more force than the rest; Because the Medication is oft renewed; Whereas the rest are applyed but at one time: And therefore the Vertue may the sooner vanish. But still I doubt, that the Root is somewhat too stubborne to receiue those fine Impressions; And besides, (as I said before,) they haue a great Hill to goe vp. I iudge therefore the likeliest way to be the Perforation of the Body of the Tree, in senerall Places, one aboue the other; And the Filling of the Holes with Dung mingled with the Medicine. And the Watring of those Lumpes of Dung, with Squirts of an Infusion of the Medicine in Dunged water, once in three or foure Daies.

VI. Century.

OVR Experiments we take care to be, (as we haue often said,) either Experimenta Fructifera, or Lucifera; Either of Vse, or of Discouery: For we hate Impostures; And despise Curiosities. Yet because we must apply out Selues somewhat to Others, wee will set downe some Curiofities touching Plants.

It is a Curiosity, to haue seuerall Fruits vpon one Tree; And the more, when some of them come Early, and some come Late; So that you, may haue, vpon the same Tree, Ripe Fruits all Sommer. This is easily done, by Grafting of Seurall Cians, vpon seuerall Boughes of a Stock, in a good Ground, plentifully sed. So you may haue all Kindes of Cherries, and all kindes of Plums, and Peaches, and Apricots, vpon one Tree; But I conceiue the Diuer sity of Fruits must be such, as will grast vpon the same Stocke. And therefore, I doubt, whether you can haue Apples, or Peares, or Orenges, vpon the same Stocke, vpon which you graft Plummes.

It is a Curiosity to haue Fruits of Diuers Shopes, and Figures. This is easily performed by Moulding them, when the Fruit is young, with Moulds of Earth, or Wood. So you may haue Cucumbers &c. as Long as a Cane; Or as Round as a Spheare; Or formed like a Crosse. You may haue also Apples, in the sorme of Peares, or Limons. You may haue also Fruit in more Accurate Figures; As we said of Men, Beasts, or Birds, according as you make the Moulds. Wherein you must vnderstand, that you make the Mould big enough, to containe the whole Fruit, when it is growne to the greatest: For else you will choake the Spreading of the Fruit; Which otherwise would spread it selfe, and fill the Concaue, and so be turned into the Shape desired; As it is in Mouldworkes of Liquid Things. Some doubt may be conceiued, that the Keeping of the Sunne from the Fruit, may hurt it: But there is ordinary experience of Fruit that groweth Couered. Quare also, whether some small Holes, may not be made in the Wood, to let in the Sunne. And note, that it were best to make the Moulds partible, glued, or cemented together, that you may open them, when you take out the Fruit.

It is a Curiosity, to haue Inscriptions, or Engrauings, in Fruit, or Trees. This is easily performed, by Writing with a Needle, or Bodkin, or Knife, or the like, when the Fruit, or Trees are young; For as they grow, so the Letters will grow more large, and Graphicall.

— Teneris{que} meos incidere Amores
Arboribus, crescent illa, crescetis Amores.

You may haue Trees apparrelled with Flowers, or Herbs, by Boring Holes in the Bodies of them, and Putting into them Earth Holpen with Mucke, and Setting Seeds, or Slips, of Wielets, Stramberries, Wilde-Thyme Camamill, and such like in the Earth. Wherein they doe but grow, in the Tree, as they doe in Pots; Though (perhaps) with some Feeding from the Trees. It would be tried also with Shoots of Vines and Roots of RedRoses; For it may be, they being of a more Ligueout Nature, will incorporate with the Tree it selfe.

It is an ordinary Curiosity, to Forme Trees and Sbrubs, (as Rosemary, Inniper, and the like,) into Sundry Shapes; which is done by Moulding them within, and Cutting them without. But they are but lame Things, being too small to keepe Figure: Great Castles made of Trees vpon Frames of Timber, with Turrets, and Arches, were anciently matters of Magnificence.

Amongst Cariofities, I shall place Colouration, though it be somewhat better: For Beauty in Flowers is their Preheminence. It is obserued by some, that Gilly-flowers, Sweet-Williams, Yielets, that are Coloured, if they be neglected, and neither Watred, not New Monlded, nor Transplanted, will turne White. And it is probable, that the White with much culture, may turne Coloured. For this is certaine, that the White Colour commeth of Scarcity of Nourishment; Except in Flowers that are onely White, and admit no other Colours.

It is good therefore, to see what Natures doe accompany what Colours; For by that you shall haue Light, how to induce Colours, by Producing those Natures. Whites are more Inodorate, (for the most part) than Flowers of the same kinde Coloured; As is found in Single White Violets, White-Roses, White GillyFlowers, White Stock-Grlly-Flowers, &c. Wee finde also, that Blossomes of Trees, that are White, are commonly Inodorate; As Cherries, Pearas; Pl ——

s; Whereas those of Apples, Crabs, Almonds, and Peaches, are Blushy, and Smell Sweet. The Cause is, for that the Substance that maketh the Flower, is of the thinnest and sinest of the Plant; Which also maketh Flowers to be of so dainty Colours. And if it bee too Sparing, and Thinne, it attaineth no Strength of Odour; Except it be in such Plants, as are very Succulent; Whereby they need rather to be scanted in their Nourishment, than replenished, to haue them sweet. As we fee in White Satyrian, which is of a Dainty Smell; And in Beane-Flowers, &c. And againe, if the Plant be of Nature, to put forth White Flowers onely, and those not thinne, or dry, they are commonly of rancke and fulsome Smell; As May-Flowers, and White Lillies.

Contrariwise, in Berries, the White is commonly more Delicaee, and Sweet in Taste, than the Coloured; As wee see in White Grapes; In White Raspes; In White Strawberries; In White Carra-, &c. The Cause is, for that the Coloured are more iuyced, and courfer iuyced; And therefore not so well and equally Concocted; But the White are better proportioned, to the Disgestion of the Plant.

But in Fruits, the White commonly is meaner; As in Peare-Plums, Da-asi-s, &c. And the Choicest Plammes are Blacke, The Malberry, (which though they call it a Berry, is a Fruit,) is better the Blacke, than the White. The Haruest White-Pl-mme, is a base Pl-mme; And the Verdoccie and White Date-Plamme, are no very good Plummes. The Cause is, for that they are all Ouer-watry: Whereas an higher Concoction is required for Sweetnesse, or Pleasure of Taste; And therefore all your dainty Plummes, are a little dry, and come from the Stone; As the Muscle-Plumme, the Damasin-Plumme, the Peach, the Apricet, &c. Yet some Fruits, which grow not to be Blacke, are of the Nature of Berries, sweetest such as are Paler; As the Cae-r-Cherry, which inclineth more to White, is sweeter than the Red; But the Egriot is more sowre.

Take GillyFlower Seed, of one kinde of GillyFlower: (As of the Cloue-Gilly-Flower, which is the most Common;) And sow it; And there will come vp GillyFlowers, some of one Colour, and some of another, casually, as the Seed meeteth with Nourishment in the Earth; So that the Gardiners finde, that they may haue two or three Roots amongst an hundred, that are rare, and of great

Price: As Purple, Carnation of Seuerall Stripes; The Canse is, (no doubt,) that in Earth, though it be contiguous, and in one Bed, there are very feuerall luyees; And as the Seed doth casually meet with them, so it commethforth. And it is noted especially, that those which doe come vp Purple, doe alwayes come vp Single; The Iuyee, as it seemeth, not being able to suffice a Succulent Colour, and a Double Leafe. This Experiment of seuerall Colours, comming vp from one Seed, would be tried also in Larkes-Foot, Moukes-Head, Rappy, and Hollyoke.

Few Fruits are coloured Red within; The Queene-Apple is; And another Apple, called the Rose Apple; Mulberries likewise; and Grapes, though most toward the Skinne. There is a Peach also, that hath a Circle of Red towards the Stone: And the Egriot-Cherry is somewhat Red within; But no Peare, nor Warden, not Plumme, nor Apricet, although they haue (many times) Red sides, are Coloured Red within. The Canse may be enquired.

The Generall Colour of Plants is Greene; which is a Colour that no Flower is of. There is a Greenish Prime-Rose, but it is Pale, and scatce a Greene; The Leaues of some Trees turne a little Murry, or Reddish; And they be commonly Young Leaues that doe so; As it is in Oakes, and Vines, and Hasle. Leaves tot into a Yellow; And some Hollies haue part of their Leaues Yellow, that are, (to all seeming,) as Fresh and Shining, as the Greene. I suppose also, that Yellow is a lesse Succulent Colour, than Greene; And a degree nearer White. For it hath beene noted, that those Yellow Leaues of Holly stand euor towards the North, or North-East. Some Roots are Yellow, as Carress; And some Plants Bloud-Red, Stalke and Leafe, and all; as Amaranthus. Some Herbs incline to Purple, and Red; As a Kinde of Sage doth, and a Kinde of Mint, and Rosa Solis, &c. And Some haue White Leaues, as another Kinde of Sape, and another kinde of Mins; But Azure, and a Paire Purple, are neuer found in Leaues. This Sheweth, that Flowers are made of a Refined luyce, of the Earth; And so are Fruits: But Leaues of a more Courfe, and Common.

It is a Curiosity also to make Flowers Double; Which is effected by Often Remouing them into New Earth; As on the contrary Part, Double Flowers, by neglecting, and not Remouing, proue Single And the Way to doe it speedily, is

to sow or set Seeds, or Slips of Flowers; And as soone as they come vp, to remoue them into New Ground, that is good. Enquire also, whether Inoculating of Flowers, (as Stock-GillyFlowers, Roses, MuskeRoses. &c.) doth not make them Double. There is a Cherry-Tree, that hath Double Blossomes; But that Tree beareth no Fruit; And, it may be, that the same Meanes, which applied to the Tree, doth extremely accelerate the Sap to rise, and breake sorth. Would make the Tree spend it selfe in Flowers, and those to become Double; Which were a great pleasure to see; Especially in AppleTrees, Peach-Trees, and Almond-Trees, that haue Blossomes Blush-Coloured.

The Making of Fruits, without Core or Stone, is likewise a Curiosity; And somewhat better: Because whatsoeuer maketh them so, is like to make them more Tender and Delicate. If a Cions or Shooe, fit to be set in the Ground, haue the Pith finely taken forth, (and not altogether, but some of it left, the better to saue the life,) it will beare a Fruit with little, or no Core, or Stone. And the like is said to be, of diuiding a Quicke-Tree downe to the Ground, and Taking out the Pith, and then binding it vp againe.

It is reported also, that a Citron grafted vpon a Quince haue small or no Seeds; And it is very probable, that grafted vpon a Stocke, that a Sweeter Fruit may hath make the Fruit sweeter, and more void of the harsh ◊◊◊ or Seeds.

It is reported, that not only the —— —— of the —— but the Steepping of the Iuyce of the Pith, from Rising in the if you should boare a Tree cleane thorow, and put a wedge in.It is true, there is some Affinitie betweene the Pith, and the Kernell,because they are both of a harsh Substance, and both placed in the Middest.

It is reported, that Trees watred perpetually with Warme Water, will make a Fruit, with little or no Core, or — . And the Rule is generall, that whatsoeuer will make a Water-Tree a Garden-Tree, will make a Garden-Tree to haue lesse Core, or Stone.

The Rule is certaine, that Plants for want of Culture, —— to be be baser in the same Kinde; And sometimes so —— , as to change into another Kinde. 1. The St — ding —— not being Remoued, — keth them degenerase. 2. Drangle,

vnlesse the Earth of it selfe be moist, doth the like. 3. So doth Remouing into worse Earth, or Gorbearing to C — p-st the Earth; As wee see that Water-Mini turneth into Field-Mini; And the Colewort into Rape by Neglect, &c.

Whatsouer Fruit vseth to bee set vpon a Ro — , or a Slipif it bee will degenerate. Grapes sowne; Figs, Almonds, Pomgranate Kernells sowne; make the Fruits degenerate, and become Wilde. And againe, Most of those Fruits that vse to be grafted, if they be set of Kernells, or Stones, degenerate. It is true, that —— , (as hath beene touched before,) doe better vpon S — S — , than vpon Grafting: And the Rule of Exception should seeme to be this; That whatsoeuer P —— requireth much Moisture, prospereth better vpon the Stone, or Kernell, than vpon the Graft. For the Stocke, though it glueth a finer Nourishment, yet it giueth a scanter, than the Earth at large.

Seeds, if they be very Old, and yet haue strength enough to bring forth a Plant, make the Plant degenerate. And therefore skilfull Gardiners make triall of the Seeds, before they buy them, whether they be good or no, by Putting them into Water gently Boyled; And if they be good, they will sprout within Halfe an Houre.

It is strange which is reported, that Basill too such exposed to the Sunne, doth turne into Wilde Thyme: Although those two Herbs seeme to haue small Affinitie; but Basill is almost the only Hot Herbe, that hath Fat and Succulent Leaues; Which Oylinesse, if it be drawne forth by the Sunne, it is like it will make a very great Change.

There is an old Tradition, that Boughs of Oake, put into the Earth, will put forth Wilde Vines: Which if it be true, (no doubt,) it is not the Oake that turneth into a Vine, but the Oake-Bough Putrifying, qualifieth the Earth, to put forth a Vine of it selfe.

It is not impossible, and I haue heard it verified, that vpon Cutting downe of an Old Timber-Tree, the Stub hath put out sometimes a Tree of another Kinde; As that Beech hath put forth Birch; Which, if it be true, the Cause may be, for that the old Stub is too scant of Iuyce, to put forth the former Tree; And

therefore putteth forth a Tree of a smaller kindey that needeth lesse Nourishment.

There is an Opinion in the Countrey, that if the same Ground be oft sowen, with the Graine that grew vpon it, it will, in the end, grow to be of a ba-er kinde.

It is certaine, that in very Sterile Yeares, Carne sowne will grow to an Other Kinde.

Grandia sapè quibus mandauimus Hordes Sulcis.

Infoelix Lolium, & steriles dominantur Auena.

And generally it is a Rule, that Plants, that are brought forth by Culture, as Corne, will sooner change into other Species, than those that come of themselues: For that Culture giueth but an Aduentitious Nature, which is more easily put off.

This worke of the Transmutation of Plants, one into another, is inter Magnalia Naturae: For the Transmutation of Species is, in the vulgar philosophie, pronounced Impossible: And certainly, it is a thing of difficultie, and requireth deepe Seatch into Nature: But feeing there appeare some manifest Instances of it, the Opinion of Impossibilitie is to be reiected; And the Meanes thereof to be found out. Wee see, that in Liuing Creatures, that come of Putrefaction, there is much Transmutation, of one into another; As Catterpillers turne into Flies, &c. And it should seeme probable, that what soeuer Creature, hauing life, is generated without Seed, that Creature will change out of one Species into another. For it is the Seed, and the Nature of it, which locketh and boundeth in the Creature, that it doth not expatiate. So as wee may well conclude, that seeing the Earth, of it selfe, doth put forth Plants, without Seed, therefore Plants may well haue a Transmigration of Species. Wherefore Wanting Instances, which doe occurre, wee shall giue Directions of the most likely Trialls: And generally, wee would not haue those, that read this our Worke of Sylua Syluarum, account it strange, or thinke that it is an Ouer-Haste, that wee haue set downe Particulars vntried; For contrariwise, in our owne Estimation, we account such Particulars, more worthy, than those that are already tried and knowne. For these Later must

be taken as you finde them; But the Other doe leuell Point blanke at the Inuenting of Causes, and Axiomes.

Flast therefore you must make account, that if you will haue one Plant change into another, you must haue the Nourishment ouer-rule the Seed; And therefore you are to practise it by Nourishments as contrary, as may be, to the Nature of the Harbs; So neuerthelesse as the Herbe may grow; And likewise with Seeds that are of the Weakest Sort, and haue least Vigour. You shall doe well therefore, to take Marsh-Herbs, and Plant them vpon Tops of Hills, and Champaignes; And such plants as require much Moisture, vpon Sandy and very drie Grounds. As for Example, Marsh-Maltowes, and Sedge, vpon Hills; Cucumber and Let-nce. Seeds, and Coloworis, vpon a Sandy Plas: So contrariwise plant Bushes, Heath, Ling, and Brakes, vpon a Wet or Mu-sh Ground. This I conceiue also, that all E-c-lent and Garden-Herbs, set vpon the Tops of Hills, will proue more Modicinall, though leffe E — lent, than they were before. And it may be likewise, some Wilde-Herbs you may make Sallel-Herbs. This is the first Rule for Trans — ction of Plants.

The second Rule shall be to burie some few Seeds, of the Herbe you would change, amongst other Seeds; And then you shall see, whether the luyee of those other Seeds, doe — so qualifie the Earth, as it will alter the Seed, whereupon you worke. As for Example; Put Parfly — amongst Onion-S — t Or Lettuce Seed amongst Parthy-Seed; Or Ba — Seed amongst Thyme-Seed; And see the Change of Taste on otherwise. But you shall doe well, to put the Seed you would change, into a little linnen Cloth, that it mingle not with the forraine Seed.

The third Rule shall be, the Making of some Medley or Mixture of Earth, with some other plants Braised, or Shanes, either in Leafe or Root; As for Example, make Earth with a Mixture of Calmert-Leaues, stamped, and set in it Artis — kes, or Pars-ips; So take Earth made with Mai — , or Origa — m, or Wilde Th — , bruised, or stamped, and set in it Fennell-Seed, &c. In which Operation, the Processe of Nature still will be, (as I conceiue,) not that the Harbe you worke vpon, should draw the Iuyce of the Fo — ne Herbes (For that Opinion

was haue formerly reiected;) But that there will be a New Confection of Mould, which perhaps will alter the Seed, and yet not to the kinde of the former Herbe.

The fo — Rule shall be, to — what Herbs, some — doe put forth of themselues; And to take — Earth, and to Pat it, or to —— — it; And in that to set the Seed you would change: as for example, sake from vnder Walls, or the like, where Nettles put forth in abundance, the Earth which you shall there finde, without any String, or Root of the Nettles; And Pot that Earth, and set in it Stock-gilly, flowers, or Wall Flowers, &c. Or sow in the Seeds of them; And see what the Euent will be: Or take Earth, that you haue prepared to put forth Mushromes, of it selfe, (whereof you shall finde some Instances following;) And sow in it Purslane Seed, or Lettuce-Seed; For in these Experiments, it is likely enough, that the Earth being accustomed to send forth one Kinde of Nourishment, will alter the new Seed.

The fifth Rule shall be, to make the Herbe grow Contrary to his Nature; As to make Ground-Herbes rise in Heighth: As for example; Carry Camomill, or Wilde-Thyme, or the Greene Strawberry, vpon Sticks, as you doe Heps vpon Poles; And see what the Euent will be.

The sixth Rule shall be, to make Plants grow out of the Sunne, or Open Aire; For that is a great Mutation in Nature; And may induce a Change in the Seed: As barrell vp Earth, and sow some Seed in it, and put it in the Bottome of a Pond; Or put it in some great hollow Tree; Trie also the Sowing of Seeds, in the Bottomes of Caues; And Pots with Seeds sowne, hanged vp in Wells, some distance from the Water, and see what the Euent will be.

It is certaine, that Timber-Trees in Coppice-Words, grow more vpright, and more free from Vnder-Boughs, than those that stand in the Field; The Cause whereof is, for that Plants haue a Naturall Motion, to get to the Sunne; And besides, they are not glutted with too much Nourishment; For that the Coppice shareth with them; And Repletion euer hindreth Stature; Lastly, they are kept warme; And that euer in Plants helpeth Mounting.

Trees, that are, of themselues, full of Heat, (which Heat appeareth by their Inflammable Gumms,) as Firrs, and Pines, mount of themselues in Heighth

without Side-Boughs, till they come towards the Top. The Cause is, partly Heat; And partly Tenuitie of Iuyce; Both which send the Sap vpwards. As for Iuniper, it is but a Shrub, and groweth not bigge enough in Body, to maintaine a tall Tree.

It is reported, that a Good Strong Canuas, spread ouer a Tree grasted low, soone after it putteth forth, will dwarfe it, and make it spread. The Cause is plaine; For that all Things that grow, will grow as they finde Roome.

Trees are generally set of Roots, or Kernells; But if you set them of Slips, (as of some Trees you may, by name the Mulberry), some of the Slips will take; And those that take, (as is reported,) will be DwarfeTrees. The Cause is, for that a Slip draweth Nourishment more weakly, than either a Root, or Kernell.

All Plants, that put forth their Sap hastily, haue their Bodies not proportionable to their Length; And therefore they are Winders, and Creepers; As Iuy, Briony, Hops, Woodbine: Whereas Dwarsing requireth a slow Putting forth, and lesse Vigour of Mounting.

The Scripture saith, that Salomon wrote a Naturall History, from the Cedar of Libanus, to the Mosse growing vpon the Wall: For so the belt Translations haue it. And it is true that Mosse is but the Rudiment of a Plant. And (as it were) the Mould of Earth, or Barke.

Mosse groweth chiefly vpon Ridges of Houses, tiled or thatched, And vpon the Crests of Walls. And that Mosse is of a lightsome, and pleasant Greene. The Growing vpon Slopes is caused, for that Mosse, as on the one side it commeth of Moisture and Water, so on the other side the Water must but Slide, and not Stand or Poole. And the Growing vpon Tiles, or Walls, &c. is caused, for that those dried Earths, hauing not Moisture sufficient to put forth a Plant, doe practise Gormination by Putting forth Mosse; Though when by Age, or otherwise, they grow to relent and resolue, they sometimes put forth Plants; As Wall-Flowers. And almost all Mosse hath here and there little Stalkes, besides the low Thrumme.

Mosse groweth vpon Alleyes, especially such as lye Cold, and vpon the North; As in diuers Tarrasses: And againe, if they be much trodden; Or if they

were, at the first, grauelled; For wheresoeuer Plants are kept downe, the Earth putteth forth Mosse.

Old Ground, that hath beene long vnbroken vp, gathereth Mosse: And therfore Husbandmen vse to cure theit Pasture Grounds, when they grow to Mosse, by Tilling them for a yeare, or two: Which also dependeth vpon the same Cause; For that, the more Sparing and Staruing Iuyce of the Earth, in sufficient for Plants, doth breed Mosse.

Old Trees are more Mossy, (farre) than Young; For that the Sap is not so francke as to rise all to the Boughes, but tireth by the way, and putteth out Mosse.

Fountaines haue Mosse growing vpon the Ground about them;

Muscosi Fontes; —

The Cause is, for that the Fountaines draine the Water from the Ground Adiacent, and leaue but sufficient Moisture to breed Mosse: And besides, the Coldnesse of the Water conduceth to the same.

The Mosse of Trees, is a kinde of Haire; For it is the Iuyce of the Tree, that is Excerned, and doth not Affimilate. And vpon great Trees the Mosse gathereth a Figure, like a Leafe.

The Moister Sort of Trees yeeld little Mosse; As we see in Aspes, Poplars, Willowes, Beeches, &c. Which is partly caused, for the Reason that hath beene giuen, of the francke Putting vp of the Sap into the Boughes; And partly, for that the Barkes of those Trees, are more Close and Smooth, than those of Oakes, and Ashes; Whereby the Mosse can the hardlier issue out.

In Clay-Grounds, all Fruit-Trees grow full of Mosse, both vpon Body and Boughes; Which is caused, partly by the Coldnesse of the Ground, whereby the Plants nourish lesse; And partly by the Toughnesse of the Earth, whereby the Sap is shut in, and cannot get vp, to spread so franckly, as it should doe.

Wee haue said heretofore, that if Trees be Hide-bound, they wax lesse Fruitfull, and gather Mosse: And that they are holpen by Hacking, &c. And therefore by the Reason of Contraries, if Trees be bound in with Cords, or some Outward Bands, they will put forth more Mosse: Which (I thinke) happeneth to

Trees that stand Bleake, and vpon the Cold Winds. It would also be tried, whether, if you couer a Tree, somewhat thicke vpon the top, after his Powling, it will not gather more Mosse. I thinke also, the Watring of Trees with Cold Fountaine-Water, will make them grow full of Mosse.

There is a Mosse the Perfumers haue, which commeth out of AppleTrees, that hath an Excellent Sent. Quare particularly for the Manner of the Growth, and the Nature of it. And for this Experiments, sake, being a Thing of Price, I haue set downe the last Experiments, how to multiply, and call on Mosses.

Next vnto Mosse, I will speake of Mushromes; Which are likewise an Vnperfect Plant. These Mushromes haue two strange Properties; The One, that they yeeld so Delicious a Meat; The other, that they come vp so bastily; As in a Night; And yet they are Vnsowne. And therefore, such as are Vpstarts in State, they call, in reproch, Mushromes. It must needs bee therefore, that they be made of much Moisture; And that Moisture Fat, Grosse, and yet somewhat Concocted. And (indeed) we finde, that Mushromes cause the Accident, which we call Incubus, or the Mare, in the Stomacke. And therefore the Surfet of them may Suffocate, and Empoyson. And this sheweth, that they are Windy; And that Windinesse is Grosse, and Swelling; Not Sharpe, or Griping. And vpon the same reason Mushromes are a venereous Meat.

It is reported, that the Barke of White, or Red Poplar, (which are of the Moistest of Trees,) cut small, and cast into Furrowes well dunged, will cause the Ground to put forth Mushromes, at all Seasons of the Yeare, fit to be eaten. Some adde to the Mixture Leanen of Bread, resolued in Water.

It is reported, that if a Hilly-Field, where the Stubble is standing, bee set on Fire, in a Showry Season, it will put forth great Store of Mushromes.

It is reported, that HartsHorne, Shauen, or in Small Peeces, mixed with Dung, and watred, putteth vp Mushromes. And we know HartsHorne is of a Fat and Clammy Substance: And it may be Oxe-Horne would doe the like.

It hath beene reported, though it be searce credible, that Iuy hath growne out of a Stags-Horne; Which they suppose, did rather come from a Confrication of the Horne vpon the Iuy than from the Horne it selfe. There is not knowne any

Substance, but Earth, and the Procedures of Earth, (as Tile, Stone, &c.) that yeeldeth any Mosse, or Herby Substance. There may be Trial made of some Seeds, as that of Fennel-Seed, Mustard Seed, and Rape-Seed, put into some little Holes, made in the Hornes of Stags, or Oxen, to see if they will grow.

There is also another Vnperfect Plant, that (in shew) is like a great Mushrome: And it is sometimes as broad as ones Hat; Which they call a Toads-Stoole: But it is not Esculent; And it groweth (commonly) by a dead Stub of a Tree; And likewise about the Roots of Rotten Trees: And therefore seemeth to take his Iuyce from Wood Putrified. Which sheweth, by the way, that Wood-Putrified yeeldeth a franke Moisture.

There is a Cake, that groweth vpon the Side of a Dead Tree, that hath gotten no Name, but it is large, and of a Chesnut Colour, and hard, and pithy; Whereby it should seeme, that euen Dead Trees forget not their Putting forth; No more than the Careasses of Mens Bodies, that put forth Haire, and Nailes, for a Time.

There is a Cod, or Bag, that groweth commonly in the Fields; That at the first is hard like a Tennis-Ball, and white; And after groweth of a Mushrome Colour, and full of light Dust vpon the Breaking: And is thought to be dangerous for the Eyes, if the Powder get into them; And to bee good for Kibes. Belike it hath a Corrosiue, and Fretting Nature.

There is an Herb called Iewes-Eare, that groweth vpon the Roots, and Lower Parts of the Bodies of Trees; Especially of Elders, and sometimes Ashes. It hath a strange Property; For in Warme-water, it swelleth, and openeth extremely. It is not greene, but of a dusky browne Colour. And it is vsed for Squinancies, and Inflammations in the Throat; Whereby it seemeth to haue a Mollifying, and Lenifying Vertue.

There is a Kinde of Spongy Excrescence, which groweth chiefly vpon the Roots of the Laser-Tree; And sometimes vpon Cedar, and other Trees. It is very White, and Light, and Friable: Which we call Agarick. It is famous in Physicke for the Purging of Tough flegme. And it is also an excellent Opener for the Liuer: But Offensiue to the Stomack; And in Taste it is, at the first, Sweet, and after Bitter.

We finde no Super-Plant, that is a Formed Plant, but Misseltoe. They haue an idle Tradition, that there is a Bird, called a Missel-Bird, that feedeth vpon a Seed, which many times shee cannot disgest, and so expelleth it whole with her Excrement: which falling vpon a Bough of a Tree, that hath some Rift, putteth forth the Misseltoe. But this is a Fable: For it is not probable, that Birds should feed vpon that they cannot disgest. But allow that, yet it cannot be for other Reasons: For First, it is found but vpon certaine Trees; And those Trees beare no such Fruit, as may allure that Bird to sit, and feed vpon them. It may be, that Bird feedeth vpon the Misseltoe-Berries, and so is often found there; Which may haue giuen occasion to the Tale. But that which maketh an End of the Question, is, that Misseltoe hath beene found to put forth vnder the Boughes, and not (onely) aboue the Boughes: So it cannot be any Thing that falleth vpon the Bough. Misseltoe groweth chiefly vpon CrabTrees, AppleTrees; sometimes vpon Hasses; And rarely vpon Oakes; The Misseltoe whereof is counted very Medicinall. It is cuer greene, Winter and Summer; And beareth a White Glistering Berry: And it is a Plant, vtterly differing from the Plant, vpon which it groweth. Two things therfore may be certainly set downe: First, that Super-fatation must be by Abundance of Sap, in the Bough that putteth it forth: Secondly, that that Sap must be such, as the Tree doth excerne, and cannot affimilate; For else it would goe into a Bough; And besides, it seemeth to be more Fat and Vnctuous, than the Ordinary Sap of the Tree; Both by the Berry, which is Clammy; And by that it continueth greene, Winter and Summer, which the Tree doth not.

This Experiment of Misseltoe may giue Light to other Practises. Therefore Triall would be made, by Ripping of the Bough of a CrabTree, in the Barke; And Watring of the Wound euery Day, with Warme Water Dunged, to see if it would bring forth Misseltoe, or any such like Thing. But it were yet more likely to try it, with some other Watring, or Anointing, that were not so Naturall to the Tree, as Water is; As Oyle, or Barme of Drinke, &c. So they be such Things as kill not the Bough.

It were good to try, what Plants would put forth, if they be forbidden to put forth their Naturall Boughes: Poll therefore a Tree, and couer it, some thicknesse, with Clay on the Top; And see what it will put forth. I suppose it will put forth Roots; For so will a Cions, being turned downe into Clay: Therefore, in this Experiment also, the Tree would be closed with somewhat, that is not so Naturall to the Plant, as Clay is. Try it with Leather, or Cloth, or Painting, so it be not hurtfull to the Tree. And it is certaine, that a Brake hath beene knowne to grow out of a Pollard.

A Man may count the Prickles of Trees to be a kinde of Excrescence; For they will neuer be Boughes, nor beare Leaues. The Plants that haue Prickles, are Thornes, blacke and white; Brier; Rose; Limon-Trees; CrabTrees; Goose-Berry; Berbery; These haue it in the Bough, The Plants that haue Prickles in the Leafe, are; Holly; Iuniper; Whin-bush; Thistle; Nettles also haue a small Venemous Prickle; So hath Borrage a small prickle, but harmelesse. The Cause must be Hasty Putting forth; Want of Moisture; And the Closenesse of the Barke; For the Haste of the Spirit to put forth, and the Want of Nourishment to put forth a Bough, and the Closenesse of the Barke, cause Prickles in Boughes; And therefore they are euer like a Pyramis, for that the Moisture spendeth after a little Putting forth. And for Prickles in Leaues, they come also of Putting forth more Iuyce into the Leafe, than can spread in the Leafe smooth; And therefore the Leaues otherwise are Rough, as Borrage and Nettles are. As for the Leaues of Holly, they are Smooth, but neuer Plaine, but as it were with Folds, for the same Cause.

There be also Plants, that though they haue no Prickles, yet they haue a Kinde of Downy or Veluet Rine, vpon their Leaues; As Rose Campion, Stock-Gilly-Flowers, Colts-Foot; which Downe or Nap commeth of a Subtill Spirit, in a Soft or Fat Substance. For it is certaine, that both Stock-Gilly-Flowers, and Rose-Campions, stamped, haue beene applied, with successe,) to the Wrests of those that haue had Tertian, or Quartan Agues; And the Vapour of Colts-Foot hath a Sanatiue vertue, towards the Lungs; And the Leafe also is Healing in Surgery.

Another Kinde of Excrescence is an Exudation of Plants, ioyned with Putrefaction; As we see in Oake-Apples, which are found chiefly vpon the Leaues of Oakes; And the like vpon Willowes: And Countrey People haue a kinde of Prediction, that if the Oake-Apple, broken, be full of Wormes, it is a Signe of a Pestilent Yeare; Which is a likely Thing, because they grow of Corruption.

There is also vpon Sweet, or other Brier, a fine Tuse, or Brush of Mosse, of diuers Colours; Which if you cut, you shall euer finde full of little white Wormes.

It is certaine, that Earth taken out of the Foundations of Vaults and Houses, and Bottomes of Wells, and then put into Pots, will put forth Sundry Kindes of Herbs: But some Time is required, for the Germination; For if it be taken, but from a Fathome deepe, it will put forth the First Yeare; If much deeper, not till after a Yeare, or Two.

The Nature of the Plants growing out of Earth so taken vp, doth follow the Nature of the Mould it selfe; As if the Mould be Soft, and Fine, it putteth forth Soft Herbs; As Grasse, Plantine, and the like; if the Earth be Harder and Courser, it putteth forth Herbs more Rough, as Thistles, Firres, &c.

It is Common Experience, that where Alleyes are close Grauelled, the Earth putteth forth, the first yeare, Knot-grasse, and after Spire-grasse. The Cause is, for that the Hard Grauell, or Pebble at the first Laying, will not suffer the Grasse to come forth vpright, but turneth it to finde his way where it can; But after that the Earth is somewhat loosened at the Top, the Ordinary Grasse commeth vp.

It is reported, that Earth, being taken out of Shady and Watry Woods, some depth, and Potted, will put forth Herbs of a Fat and Iuycy Substance; As Penny-wort, Purslane, Hausleeke, Penny-royall, &c.

The Water also doth send forth Plants, that haue no Roots fixed in the Bottome; But they are lesse Perfect Plants, being almost but Leaues, and those Small ones; Such is that we call Duck-Weed; Which hath a Leafe no bigger than a Thyme-Leafe, but of a fresher Greene, and putteth forth a little String into the

Water, farre from the Bottome. As for the Water-Lilly, it hath a Root in the Ground, And so haue a Number of other Herbs that grow in Ponds.

It is reported by some of the Ancients, and some Moderne Teftimony likewife, that there be some Plants, that grow vpon the Top of the Sea; Being supposed to grow of some Concretion of Slime from the Water, where the Sunne beateth hot, and where the Sea stirreth little. As for Alga Marina, (Sea-weed,) and Eryngium (Sea-Thistle,) both haue Roots; but the Sea-weed vnder the Water, the Sea-Thistle but vpon the Shore.

The Ancients haue noted, that there are some Herbs, that grow out of Snow, laid vp close together, and Putrified; And that they are all Bitter; And they name one specially, Flomus, which wee call MothMullein It is certaine, that Wormes are found in Snow commonly, like Earth-Wormes; And therefore it is not vnlike, that it may likewise put forth Plants.

The Ancients haue affirmed, that there are some Herbs, that grow out of Stone; Which may be, for that it is certain, that Toads haue been found in the Middle of a Free-Stone. We see also, that Flints, lying aboue Ground, gather Mosse; And Wall-Flowers, and some other Flowers, grow vpon Walls; But whether vpon the Maine Bricke, or Stone, or whether out of the Lime, or Chinckes, is not well obserued; For Elders and Ashes haue beene seene to grow out of Steeples: But they manifestly grow out of Clefts; In so much as when they grow big, they will disioyne the Stone. And besides it is doubtfull, whether the Mortar it selfe putteth it forth, or whether some Seeds be not let fall by Birds. There be likewife Rock-Herbs; But I suppose those are, where there is some Mould, or Earth. It hath likewife beene found, that great Trees growing vpon Quarries, haue put downe their Root into the Stone.

In some Mines in Germany, as is reported, there grow in the Bottome Vegetables; And the Worke-Folkes vse to say, they haue Magicall Vertue; And will not suffer Men to gather them.

The Sea-Sands seldome beare Plants. Whereof the Cause is yeelded, by some of the Ancients, for that the Sunne exhaleth the Moisture; before it can incorporate with the Earth, and yeeld a Nourishment for the Plant. And it is

affirmed also, that Sand hath (alwayes) his Root in Clay; And that there be no Veines of Sand, any great depth within the Earth.

It is certaine, that some Plants put forth for a time, of their owne Store, without any Nourishment from Earth, Water, Stone, &c. Of which Vide the Experiment 29.

It is reported, that Earth, that was brought out of the Indies, and other Remote Countries, for Ballast of Ships, cast vpon some Grounds in Italy, did put forth Fortaine Herbs, to vs in Europe not knowne; And, that which is more, that of their Roots, Barkes, and Seeds, con-used together, and mingled with other Earth, and well Watred with Warme Water, there came forth Herbs, much like the Other.

Plants brought out of Hot Countries, will endeuour to put forth, at the same Time, that they vsually do in their owne Climate; And therfore to preserue them, there is no more required, than to keepe them from the Iniury of Putting backe by Cold. It is reported also, that Graine out of the Hotter Countries translated into the Colder, will be more forward, than the Ordinary Graine of the Cold Countrey. It is likely, that this will proue better in Graines, than in Trees; For that Graines are but Annuall; And so the Vertue, of the Seed is not worne out; Whereas in a Tree, it is embased by the Ground, to which it is Remoued.

Many Plants, which grow in the Hotter Countries; being set in the Colder, will neucrthelesse, euen in those Cold Countries, being sowne of Seeds, ate in the Spring, come vp and abide most Part of the Summer; As we finde it in Orenge, and Limon-Seeds, &c. The Seeds whereof, Sowen in the End of Aprill, will bring forth Excellent Sallets, mingled with other Herbs. And I doubt not, but the Seeds of Cloue-Trees, and Pepper-Seeds, &c. if they could come hither Greene enough to be sowen, would doe the like.

There be some Flowers, Blossomes, Graines, and Fruits, which come more Early; And Others which come more Late in the Yeare. The Flowers that come early, with vs, are; Prime-Roses, Violets, Anemonies, Water-Daffadillies, Crocus Vernus, and some early Tulippa's. And they are all Cold Plants; Which therefore, (as it should seeme,) haue a quicker Perception, of the Heat of the

Sunne Increasing, than the Hot Herbs haue; As a Cold Hand will sooner finde a little Warmth, than a Hot. And those that come next after, are Wall-Flowers, Cowflips, Hyacinths, Rosemary-Flowers, &c. And after them, Pincks, Roses, Flowerdelnces, &c. And the latest are GillyFlowers, Holly-oakes, Larkes-Foot, &c. The Earliest Blossomes are, the Blossomes of Peaches, Almonds, Cornelians, Mezerions, &c. And they are of such Trees, as haue much Moisture, either Watrie, or Oylie. And therefore Grocus Vernus also, being an Herbe, that hath, an Oylie luyce, putteth forth early. For those also finde the Sunne sooner than the Drier Trees. The Graines are, first Rye and Wheat; Then Oats and Barley; Then Pease and Beanes. For though Greene Pease and Beanes be eaten sooner, yet the Drie Ones, that are vsed for Horse-Meat, are ripe last; And it seemeth that the Fatter Graine commeth first. The Earliest Fruits are, Strawberries, Cherries, Gooseberries, Corrans; And after them Early Apples, Early Peares, Apricots, Rasps; And after them Damasins, and most Kinde of Plums, Peaches, &c. And the latest are Apples, Wardens, Grapes, Nuts, Quinces, Almonds, Sloes, Brier-Berries, Heps, Medlars, Seruices, Cornelians, &c.

It is to be noted, that (commonly) Trees that ripen latest, blossome soonest: As Peaches, Cornelians, Sloes, Almonds, &c. And it seemeth to be a Worke of Prouidence, that they blossome so soone; For otherwise, they could not haue the Sunne long enough to ripen.

There be Fruits, (but rarely,) that come twice a Teare; as some Peares, Strawberries, &c. And it seemeth they are such, as abound with Nourishment; Whereby after one Period, before the Sunne waxeth too weake, they can endure another. The Violet also, amongst Flowers, commeth twice a Yeare; Especially the Double White; And that also is a Plant full of Moisture. Roses come twice, but it is not without Ca-ting, as hath beene formerly said.

In Muscbuia, though the Corne come not vp, till late Spring, yet their Haruest is as Early as Ours. The Cause is, for that the Strength of the Ground is kept in with the Snow; And wee see with vs, that if it be a long Winter, it is commonly a more Plentifull Teare: And after those kinde of Winters likewise, the Flowers, and Corne, which are Earlier, and Later, doe come commonly at once, and at the

same time; Which troubleth the Husbandman many times; For you sh-ll haue Red Roses, and Damaske Roses, come together; And likewise the Harnest of Wheat and Barley. But this happeneth euer, for that the Earlier staieth for the Later; And not that the Later commeth sooner.

There be diuers Fruit-Trees, in the Hot Countries, which haue Blossomes, and Young Fruit, and Ripe Fruit, almost all the Yeare, succeeding one another. And it is said, the Orenge hath the like with vs, for a great Part of Summer; And so also hath the Figge. And no doubt, the Naturall Motion of Plants, is to haue so; But that either they want luyce to spend; Or they meet with the Cold of the Winter: And therefore this Circle of Ripening cannot be, but in Succulent Plants, and Hot Countries.

Some Herbs are but Annuall, and die, Root and all, once a Yeare; As Borrage, Lettuce, Cucumbers, Muske-Melons, Bafill, Tobacco, Mustard-Seed, and all kindes of Corne; Some continue many Yeares; As Hyssope, Germander, Lanander, Fennell, &c. The Cause of the Dying is double; The first is the Tendernesse and Weaknesse of the Seed, which maketh the Period in a small time; As it is in Borrage, Lettnce, Cucumbers, Corne, &c. And therefore none of these are Hot. The other Cause is, for that some Herbs can worse endure Cold; As Basill, Tobacco, Mustard-Seed. And these haue (all) much Heat.

The Lasting of Plants is most in those that are Largest of Body; As Oakes, Elme, Ches-Nut, the Loat-Tree, &c. And this holdeth in Trees; But in Herbs it is often contrary; For borage, Colewort, Pompions, which are Herbs of the Largest Size, are of small Durance; Whereas Hyssope, Winter-Sauoury, Germander, Thyme, Sage, will last long. The Cause is, for that Trees last according to the Strength, and Quantitie of their Sap and Iuyce; Being well munited by their Barke against the Iniuries of the Aire: But Herbs draw a Weake luyce; And haue a Soft Stalke; And therefore those amongst them which last longest, are Herbs of Strong Smell, and with a Sticky Stalke.

Trees that beare Mast, and Nuts, are commonly more lasting, than those that beare Fruits; Especially the Moister Fruits: As Oakes, Beeches, Chesnuts, Wall-nuts, Almonds, Pine-Trees, &c. last longer than Apples, Peares, Plums, &c. The

Cause is the Fatnesse and Oylinesse of the Sap; Which euer wasteth lesse, than the more Watry.

Trees, that bring forth their Leaues late in the Yeare, and cast them likewise late, are more lasting, than those that sprout their Leaues Early, or shed them betimes. The Cause is, for that the late Comming forth sheweth a Moisture more fixed; And the other more loose, and more easily resolued, And the same Cause is, that Wilde-Trees last longer than Garden-Trees; And in the same kinde, those whose Fruit is Acide, more than those whose Fruit is sweet.

Nothing procureth the Lasting of Trees, Bushes, and Herbs, so much, as often Cutting: For euery Cutting causeth a Renouation of the Iuyee of the Plant; That it neither goeth so farre, nor riseth so faintly, as when the Plant is not Cut: Insomuch as Annuall Plants, if you cut them seasonably, and will spare the vse of them, and suffer them to come vp still young, will last more Yeares than one; As hath beene partly touched; Such as is Lettuce, Purslane, Cucumber, and the like. And for Great Trees, we see almost all Ouer-growne-Trees, in Church-yards, or neare Ancient Buildings, and the like, are Pollards, or Dottards, and not Trees at their full Height.

Some Experiment would be made, how by Art to make Plants more Lasting, than their ordinary Period; As to make a Stalke of Wheat, &c. last a whole yeare. You must euer presuppose, that you handle it so, as the Winter killeth it not; For we speake onely of Prolonging the Naturall Period. I conceiue, that the Rule will hold; That whatsoeuer maketh the Herbe come later, than at his time, will make it last longer time: It were good to try it, in a Stalke of Wheat, &c. set in the Shade, and encompassed with a Case of Wood, not touching the Straw, to keepe out Open Aire.

As for the Preseruation of Fruits, and Plants, as well vpon the Tree, or Stalke, as gathered, we shall handle it vnder the Title of Conseruation of Bodies.

The Particular Figures of Plants we leaue to their Descriptions; But some few Things, in generall, we will obserue. Trees and Herbs, in the Growing forth of their Boughes, and Branches, are not Figured, and keep no Order. The Cause is, for that the Sap, being restrained in the Rinde, and Barke, breaketh not forth at

all; (As in the Bodies of Trees, and Stalkes of Herbs.) till they begin to branch; And then, when they make an Eruption, they breake forth casually, where they finde best way, in the Barke, or Rinde. It is true, that some Trees are more scattered in their Boughes; As Sallow-Trees, Warden-Trees, Quince-Trees, Medlar-Trees, Limon-Trees, &c. Some are more in the forme of a Pyramis, and come almost to todd; As the Peare-Tree, (which the Critickes will haue to borrow his name of — , Fire,) Orenge-Trees, Firre-Trees, Service-Trees, LimeTrees, &c. And some are more spred and broad; As Beeches, Hornebeame, &c. The rest are more indifferent. The Cause of Scattering the Boughes, is the Hasty breaking forth of the Sap; And therefore those Trees rise not in a Body of any Height, but branch neare the Ground. The Cause of the Pyramis, is the Keeping in of the Sap, long before it branch; And the spending of it when it beginneth to branch, by equall degrees. The Spreading is caused by the Carrying vp of the Sap, plentifully, without Expence; And then putting it forth speedily, and at once.

There be diuers Herbs, but no Trees, that may be said to haue some kinde of Order, in the Putting forth of their Leaues: For they haue Ioynts, or Knuckles, as it were Stops in their Germination; As haue GillyFlowers, Pinckes, Fennell, Corne, Reeds, and Canes. The Cause whereof is, for that the Sap asoendeth vnequally, and doth (as it were) tire and stop by the way. And it seemeth, they haue some Closenesse, and Hardnesse in their Stalke, which bindreth the Sap from going vp, vntill it hath gathered into a Knot, and so is more vrged to put forth. And therefore, they are most of them hollow, when the Stalke is dry. As Fennell-Stalke, Stubble, and Canes.

Flowers haue (all) exquisite Figures; And the Flower-Numbers are (chiefly) Fiue, and Foure; As in Prime-Roses, Brier-Roses, Single MuskeRoses, Single Pinkes, and GillyFlowers, &c. which haue fiue Leaues: Lillies, Flowerde-luces, Borage, Buglosse, &c. which haue foure Leaues. But some put forth Leaues not Numbered; But they are euer small Ones; As Mary-Golds, Trisoile, &c. We see also, that the Sockets, and Supporters of Flowers, are Figured; As in the Fiue Brethren of the Rose; Sockets of GillyFlowers, &c. Leaues also are all Figured,

Some Round, Some Long; None Square; And many iagged on the Sides; Which Leaues of Flowers seldome are. For I account the Iagging of Pinkes, and GillyFlowers, to be like the Inequality of Oake-leaues, or Vine-leaues, or the like; But they seldome or neuer haue any small Purles.

Of Plants, some few put forth their Blossomes before their Leaues; As Almonds, Peaches, Cornelians, Black-Thorne, &c. But most put forth some Leaues before their Blossomes; As Apples, Peares, Plums, Cherries, White-Thorne, &c. The Cause is, for that those, that put forth their Blossomes first, haue either an Acute and Sharpe Spirit; (And therfore commonly they all put forth earely in the Spring, and ripen very late; As most of the Particulars before mentioned;) Or else an Oyly Iuyce, which is apter to put out Flowers, than Leaues.

Of Plants, some are Greene all Winter; Others cast their Leaues. There are Greene a-l Winter; Holly, Iny, Box, Firre, Eugh, Cypresse, Iuniper, Bayes, RoseMary, &c. The Cause of the Holding Greene, is the Close and Compact Substance of their Leaues, and the Pedicles of them. And the Cause of that againe, is either the Tough and Viscous Iuyce of the Plant; Or the Strength and Heat thereof. Of the first Sort is Holly; Which is of so Viscous a Iuyce, as they make Bird-lime of the Barke of it. The Stalke of Iuy is Tough, and not Fragile, as we see in other small Twigs dry. Firre yeeldeth Pitch. Box is a fast and heauy Wood, as we see it in Bowles. Eugh is a Strong and Tough Wood, as we see it in Bowes. Of the second Sort is Iuniper, which is a Wood Odorate, and maketh a hot Fire. Bayes is likewise a Hot and Aromatical Wood; And so is RoseMary for a Shrub. As for the Leaues, their Density appeareth, in that, either they are Smooth and Shining, as in Bayes, Holly, Iuy, Box, &c. Or in that they are Hard and Spiry, as in the rest. And Triall would be made of Grasting of RoseMary, and Bayes, and Box, vpon a Holly-Stocke; Because they are Planes that come all Winter. It were good to try it also with Grafts of other Trees, either Fruit-Trees, or Wilde-Trees; To see whether they will not yeeld their Fruit, or beare their Leaues, later, and longer in the Winter; because the Sap of the Holly putteth

forth most in the Winter. It may be also a Mexerion-Tree, grafted vpon a Holly, will proue both an Earlier, and a Greater Tree.

There be some Plants, that beare no Flower, and yet beare Fruit: There be some, that beare Flowers, and no Fruit: There be some that beare neither Flowers, nor Fruit. Most of the great Timber-Trees, (as Oakes, Beeches, &c.) beare not apparent Flowers: Some few (likewise) of the Fruit-Trees; As Mulberry, Wall-unt, &c. And some Shrubs, (as Iuniper, Holly, &c.) beare no Flowers. Diuers Herbs also beare Seeds, (which is as the Fruit,) and yet beare no Flowers; As Parslane, &c. Those that beare Flowers and no Fruit, are few; At the Double Cherry, the Sallow, &c. But for the Cherry, it is doubtfull, whether it be not by Art, or Culture; For if it be by Art, then Triall would be made, whether Apples, and other Fruits Blossomes, may not be doubled. There are some Few, that beare neither Fruit, nor Flower; As the Elme, the Poplers, Box, Brakes, &c.

There be some Plants, that shoot still vpwards, and can Support themselues; As the greatest Part of Trees and Plants: There be some Other, that Creepe along the Ground; Or Winde about other Trees, or Props, and cannot support themselues; As Vines, Iuy, Briar, Briony, Woodbines, Hop's, Climatis, Camomill, &c. The Cause is, (as hath beene partly touched,) for that all Plants, (naturally) moue vpwards; But if the Sap put vp too fast, it maketh a slender Stalks, which will not support the weight: And therefore these latter Sort are all Swift and Hasty Commers.

The first and most Ordinary Holpe is Stercoration. The Sheeps-Dung is one of the best; And next, the Dung of Kine: And thirdly, that of Horses: Which is held to be somewhat too hot, vnlesse it be mingled. That of Pigeons for a Garden, or a small Quantity of Ground, excelleth. The Ordering of Dung is; If the Ground be Arable, to spread it immediately before the Plonghing and Sowing; And so to Plough it in: For if you spread it long before, the Sunne will draw out much of the Fatnesse of the Dung: If the Ground be Grazing Ground, to spread it somewhat late, towards Winter; That the Sunne may haue the lesse Power to dry it vp. As for speciall Composts for Gardens, (as a Hot Bed, &c.) we haue handled them before.

The Second Kind of Compost, is, the Spreading of diuers Kinds of Earths; As Marle, Chalke, Sea-Sand, Earth vpon Earth, Pond-Earth; And the Mixtures of them. Marle is thought to be the best; As hauing most Fatnesse; And not Heating the Ground too much. The next is Sea-Sand; Which (no doubt) obtaineth a speciall Vertue, by the Salt: For Salt is the first Rudiment of life. Chalke ouer heateth the Ground a little. And therfore is best vpon Gold Clay-Grounds, or Moist Grounds: But I heard a great Husband say, that it was a common Errour, to thinke that Chalke helpeth Arable Grounds, but helpeth not Grazing Grounds; Wheras (indeed) it helpeth, Grasse, as well as Corne: But that which breedeth the Errour is, because after the Chalking of the Ground, they weare it out with many Crops, without Rest; And then (indeed) afterwards it will beare little Grasse, because the Gound is tired out. It were good to try the laying of Chalke vpon Arable Grounds, a little while before Ploughing; And to Plough it in, as they doe the Dung; But then it must be Friable first, by Raine, or Lying: As for Earth, it Copasseth it Selfe; For I knew a Great Garden, that had a Field (in a manner) powred vpon it; And it did beare Fruit excellently the first yeare of the Planting: For the Surface of the Earth is cuer the Fruitfullest. And Earth so prepared hath a double Surface. But it is true, as I co¯-eiue, that such Earth, as hath Salt-Petre bred in it, if you can procure it without too much charge, doth excell. The way to hasten the Breeding of Salt-Petre, is to forbid the Sunne, and the Growth of Vegetables, And therefore, if you make a large Houell, thatched, ouer some Quantity of Ground; Nay if you doe but Plancke the Ground ouer, it will breed Salt-petre. As for Pond-Earth, or Riuer-Earth, it is a very good Compost; Especially if the Pond haue beene long vncleansed, and so the Water be not too Hungry: And I iudge it will be yet better, if there be some Mixture of Chalke.

The Third Helpe of Ground, is, by some other Substances, that haue a Vertue to make Ground Fertile; though they be not meerely Earth: wherin Ashes excell; In so much as the Countries about AEtna, and Vesuuius, haue a kinde of Amends made them, for the Mischiefe the Eruptions (many times) doe, by the exceeding Fruit fulnesse of the Soyle, caused by the Ashes, scattered about. Soot

also, though thinne spred, in a Field, or Garden, is tried to be a very good Compost. For Salt, it is too Costly: But it is tryed, that mingled with SeedCorne, and sowen together, it doth good: And I am of Opinion, that Chalke in Powder, mingled with SeedCorne, would doe good; Perhaps as much as Chalking the Ground all ouer. As for the Steeping of the Seeds, in seuerall Mixtures with Water, to giue them Vigour; Or Watring Grounds with Compost-Water; We haue spoken of them before.

The Fourth Helpe of Ground, is, the Suffering of Vegetables to dye into the Ground; And so to Fatten it; As the Stubble of Corne, Especially PeaseBrakes cast vpon the Ground, in the Beginning of Winter, will make it very Fruitfull. It were good (also) to try, whether Leaues of Trees swept together, with some Chalke and Dung mixed, to giue them more Heart, would not make a good Compost: For there is nothing lost, so much as Leaues of Trees; And as they lye scattered, and without Mixture, they rather make the Ground soure, than otherwise.

The Fifth Helpe of Ground, is Heat and Warmth. It hath beene anci —— practised to burne Heath, and Ling, and Sedge, with the vantage of Wind, vpon the Ground: Wee see, that Warmth of Walls and Enclo — es, mendeth Ground: We see also that Lying open to the South, men — th Ground: We see againe, that the Foldings of Sheepe helpe Ground.ll by their Warmth, as by their Compost: And it may be doubted, — ther the Couering of the Ground with Brakes, in the Beginning of the Winter, (where of we spake in the last Experiment,) helpeth it not, by reaso-of the Warmth. Nay some very good Husbands doe suspect, that the Gathering vp of Flints, in Flinty Ground, and Laying them on Heapes, (which is much vsed,) is no good Husbandry; For that they would keep the Ground Warme.

The Sixth Helpe of Ground is, by Watering, and Irrigation; which is in two Munners: The one by Letting in, and Shutti gout Waters, at seasonable Tunes: For Water, at some Seasons, and with reasonable dry, deth good; But at some other Seasons, and with too long Stay, doth — . And this serueth onely for Meadowes, which are along some Rtuer. The other way is, to bring Water, from

some Hanging Grounds, where there are Springs, into the Lower Grounds, carrying it in some — Furrowes; And from those Furrowes, drawing it trauerse to spread the Water. And this maketh an excellent Improuement, both for Corne, and Grasse. It is the richer, if those Hanging Grounds be fruitfull, because it washeth off some of the Fatnesse of the Earth: But howsoeuer it profiteth much. Generally, where there are great Ouerflowes, in Fens, or the like, the drowning of them in the Winter, maketh the Summer following more fruitfull: The Cause may be, for that it keepeth the Ground warme, and nourisheth it: But the Fen-Men hold, that the Sewers must be kept so, as the Water may not stay too long in the Spring, til the Weeds and Sedge be growne vp; For then the Ground will be like a Wood, which keepeth out the Sunne; And so continueth the Wet; Whereby it will peuer graze (to purpose) that yeare. Thus much for Irrigation. But for Anoydances, and Draynings of water, where there is too much, and the Helps of Ground in that kinde, wee shall speake of them in another Place.

VII. Century.

THe Differences betweene Animate and Inanimate Bodies, we shall handle fully vnder the Title of Life, and Liuing Spirits, and Powers. We shall therefore make but a briefe Mention of them in this Place. The Maine Differences are two. All Bodies haue Spirits, and Pneumaticall Parts within them: But the Maine Differences betweene Animate and Inanimate, are two: The first is, that the Spirits of Things Animate, are all Continued with themselues, and are Branched in Veines, and secret Canales, as Bloud is: And in Liuing Creatures, the Spirits haue not only Branches, but certaine Cells or Seats, where the Principall Spirits doe reside, and whereunto the rest doe resort: But the Spirits in Things Inanimate are shut in, and cut off by the Tangible Parts; And are not peruious one to another; As Aire is in Snow. The Second Maine Difference is, that the Spirits of Animate Bodies, are all in some degree, (more or lesse,) kindled and inflamed; And haue a fine Commixture of Flame, and an Aeriall Substance. But Inanimate Bodies haue their Spirits no whit Inflamed, or Kindled. And this Difference consisteth not in the Heat or Coolenesse of Spirits; For Cloues and other Spices, Naphtha and Petroleum, haue exceeding Hot Spirits, (hotter a great deale than Oyle, Wax, or Tallow, &c.) but not Inflamed. And when any of those Weake and Temperate Bodies come to be Inflamed, then they gather a much greater Heat, than others haue Vn-inflamed; besides their Light, and Motion, &c.

The Differences, which are Secondary, and proceed from these two Radicall Differences, are; First, Plants are all Figurate and Determinate, which Inanimate Bodies are not; For looke how farre the Spirit is able to Spread and Continue it selfe; So farre goeth the Shape, or Figure; And then is determined. Secondly, Plants doe nourish; Inanimate Bodies doe not: They haue an Accretion, but no Alimentation. Thirdly, Plants haue a Period of Life; which Inanimate Bodies haue not. Fourthly, they haue a Succession, and Propagation of their Kinde; which is not in Bodies Inanimate.

The Differences betweene Plants, and Metalls or Fossiles, besides those foure before mentioned, (For Metalls I hold Inanimate,) are these: First, Metalls are more Durable than Plants: Secondly, they are more Solid and Hard: Thirdly, they are wholly Subterrany; Whereas Plants are part aboue Earth, and part vnder Earth.

There be very few Creatures, that participate of the Nature of Plants, and Metalls both; Corall is one of the Nearest of both Kindes: Another is Vitrioll, for that is aptest to sprout with Moisture.

Another speciall Affinitie is betweene Plants and Mould or Putrefaction: For all Putrefaction (if it dissolue not in Arefaction) will in the end issue into Plants, or Liuing Creatures bred of Putrefaction. I account Mosse, and Mushromes, and Agaricke, and other of those kindes, to be but Moulds of the Ground, Walls, and Trees, and the like. As for Flesh, and Fish, and Plants themselues, and a Number of other things, after a Mouldinesse, or Rottensesse, or Corrupting, they will fall to breed Wormes. These Putrefactions, which haue Affinitie with Plants, haue this Difference from them; That they haue no Succession or Propagation, though they Nourish, and haue a Period of Life, and haue likewise some Figure.

I left once, by chance, a Citron cut, in a close Roome, for three Summer-Moneths, that I was absent; And at my Returne, there were grown forth, out of the Pith cut, Tufts of Haires, an Inch long, with little blacke Heads, as if they would haue beene some Herbe.

The Affinities and Differences betweene Plants and Liuing Creatures, are these that follow. They haue both of them Spirits Continued, and Branched, and also Inflamed: But first in Liuing Creatures, the Spirits haue a Cell or Seat, which Plants haue not; As was also formerly said: And secondly, the Spirits of Liuing Creatures hold more of Flame, than the Spirits of Plants doe. And these two are the Radicall Differences. For the Secondary Differences, they are as follow. First, Plants are all Fixed to the Earth; Whereas all Liuing Creatures are seuered, and of themselues. Secondly, Liuing Creatures haue Locall Motion; Plants haue not. Thirdly, Liuing Creatures nourish from their Vpper Parts, by the Mouth chiefly; Plants nourish from below, namely from the Roots. Fourthly,

Plants haue their Seed and Seminall Parts vppermost; Liuing Creatures haue them lower-most: And therefore it was said, not elegantly alone, but Philosophically; Homoest Planta inuerse; Man is like a Plant turned vpwards; For the Root in Plants, is as the Head in Liuing Creatures. Fifthly, Liuing Creatures haue a more exact Figure than Plants. Sixthly, Liuing Creatures haue more Diuersity of Organs within their Bodies, and (as it were) Inward Figures, than Plants haue. Seuenthly, Liuing Creatures haue Sense, which Plants haue not. Eighthly, Liuing Creatures haue Voluntary Motion, which Plants haue not.

For the Difference of Sexes in Plants, they are oftentimes by name distinguished; As Male-Piony, Female-Piony; Male-Rose-mary, FemaleRose mary; Hee-Holly, Shee-Holly; &c. but Generation by Copulation (certainly) extendeth not to Plants. The nearest Approach of it, is between the Hee-Palme, and the Shee-Palme; which, (as they report,) if they grow neare, incline the One to the other: In so much as, (that which is more strange,) they doubt not to report, that to keepe the Trees vpright from Bending, they tye Ropes, or Lines, from the one to the other, that the Contact might be enjoyed by the Contact of a Middle Body. But this may be Faigned, or at least Amplified. Neuerthelesse, I am apt enough to thinke, that this same Binarium of a Stronger and a Weaker, like vnto Masculine and Feminine, doth hold in all Liuing Bodies. It is confounded sometimes; As in some Creatures of Putrefaction, wherein no Markes of Distinction appeare: And it is doubled sometimes; As in Hermaphrodites: But generally there is a Degree of Strength in most Species.

The Participles or Consiners betweene Plants and Liuing Creatures, are such chiefly, as are Fixed, and haue no Locall Motion of Remoue, though they haue a Motion in their Parts; Such as are Oysters., Cockles, and such like. There is a Fabulous Narration, that in the Northerne Countries, there should be an Herbe that groweth in the likenesse of a Lambe, and feedeth vpon the Grasse, in such sort, as it will bare the Grasse round about. But I suppose, that the Figure maketh the Fable; For so we see, there be Bee-Flowers, &c. And as for the Grasse, it seemeth the Plant, hauing a great Stalke and Top, doth prey vpon the Grasse, a good way about, by drawing the Iuyce of the Earth from it.

The Indian Fig boweth his Roots downe so low, in one yeare, as of it selfe it taketh Root againe: And so multiplieth from Root to Root; Making of one Tree a kinde of Wood. The Cause is the Plenty of the Sap, and the Softnesse of the Stalke, which maketh the Bough, being ouerloaden, and not stiffely vpheld, weigh downe. It hath Leaues, as broad as a little Target, but the Fruit no bigger than Beanes. The Cause is, for that the Continuall Shade increaseth the Leaues, and abateth the Fruit; which neuerthelesse is of a pleasant Taste. And that (no doubt) is caused, by the Supplenesse and Gentlenesse of the Iuyce of that Plant, being that which maketh the Boughes also so Flexible.

It is reported by one of the Ancients, that there is a certaine Indian Tree, hauing few, but very great, Leaues, three Cubits long, and two broad; And that the Fruit, being of good Taste, groweth out of the Barke. It may be, there be Plants, that poure out the Sap so fast, as they haue no leisure, either to diuide into many Leaues, or to put forth Stalks to the Fruit. With vs Trees (generally) haue finall Leaues, in comparison. The Fig hath the greatest; And next it the Vine, Mulberry, and Sycamore; And the Least are those of the Willow, Birch, and Thorne. But there be found Herbs with farre greater Leaues than any Tree; As the Burre, Gourd, Cucumber, and Cole-wort. The Cause is, (like to that of the Indian Fig,) the hasty and plentifull Putting forth of the Sap.

There be three Things in vse for Sweetnesse; Sugar, Honey, Manna. For Sugar, to the Ancients it was scarce knowne, and little vsed. It is found in Canes: Quare, whether to the first Knuckle, or further vp? And whether the very Barke of the Cane it selfe do yeeld Sugar, or no? For Honey, the Bee maketh it, or gathereth it; But I haue heard from one, that was industrious in Husbandry, that the labour of the Bee is about the Wax; And that he hath knowne in the beginning of May, Honey-Combs empty of Honey; And within a forthnight, when the Sweet Dewes fall, filled like a Cellar. It is reported also by some of the Ancients, that there is a Tree called Occhus, in the Valleyes of Hyrcanis, that distilleth Honey in the Mornings. It is not vnlike, that the Sap and Teares of some Trees, may be sweet. It may be also, that some sweet Iuyces, fit for many vses, may be concocted out of Fruits, to the Thicknesse of Honey, or perhaps of

Sugar; The likeliest are Raisins of the Sunne, Figs, and Corrans: The Meanes may be enquired.

The Ancients report of a Tree, by the Persian Sea, vpon the ShoreSands, which is nourished with the Salt-Water; And when the Tide ebbeth, you shall see the Roots, as it were, bare without Barke, (being as it seemeth corroded by the Salt,) & grasping the Sands like a Crab; Which neuerthelesse beareth a Fruit. It were good to try some Hard Trees, as a Seruice-Tree, or Firre-Tree, by setting them within the Sands.

There be of Plants, which they vse for Garments, these that follow. Hempe; Flax; Cotton; Nettles, (whereof they make Nettle-Cloth;) Sericum, which is a Growing Silke; They make also Cables of the Barke of Lime-Trees. It is the Stalke that maketh the Filaceous Matter, commonly; And sometimes the Downe that groweth aboue.

They haue, in some Countries, a Plant of a Rosy Colour, which shutteth in the Night, Openeth in the Morning, and Openeth wide at Noone; which the Inhabitants of those Countries say is a Plant that Sleepeth. There be Sleepers enow then; For almost all Flowers doe the like.

Some Plants there are, but rare, that haue a Mossy or Downy Root; And likewise that haue a Number of Threds, like Beards; As Mandrakes; wherof Witches and Impostours make an vgly Image, giuing it the Forme of a Face at the Top of the Root, and leaue those Strings to make a broad Beard downe to the Foot. Also there is a Kinde of Nard, in Creet, (being a Kinde of Phu) that hath a Root hairy, like a Rough-Footed-Doues foot, So as you may see, there are of Roots, Bulbous Roots, Fibrous Roots, and Hirsute Roots. And, I take it, in the Bulbous, the Sap hasteneth most to the Aire, and Sunne: In the Fibrous, the Sap dollghreth more in the Earth, and therefore putteth downward: And the Hirsute is a Middle betweene both; That besides the Putting forth vpwards, and downwards, putteth forth in Round.

There are some Teares of Trees, which are kembed from the Beards of Goats: For when the Goats bite and crop them, especially in the Mornings, the

Dew being on, the Teare commeth forth, and hangeth vpon their Beards: Of this Sort is some kinde of Ladanum.

The Irrigation of the Plaine-Tree by Wine, is reported by the Ancients, to make it Fruitfull. It would be tried likewise with Roots; For vpon Seeds it worketh no great Effects.

The way to carry Farraine Roots, a long Way, is to vessell them close in Earthan Vessells. But if the Vessells be not very Great, you must make some Holes in the Bottome, to giue some Refreshment to the Roots; Which otherwise (as it seemeth) will decay, and suffocate.

The ancient Cinnamon, was, of all other Plants, while it grew, the Dryest; And those Things, which are knowne to comfort other Plants, did make that more Sterill: For in Showers it prospered worst: It grew also amongst Bushes of other kindes, where commonly Plants doe not thriue: Neither did it loue the Sunne: There might be one Cause of all those Effects; Namely, the sparing Nourishment, which that Plant required. Quare how farre Cassia, which is now the Substitute of Cinnamon, doth participate of these Things.

It is reported by one of the Ancients that Cassia when it is gathered, is put into the Skins of Beasts, newly fleyed; And that the Skins Corrupting, and Breeding Wormes, the Wormes doe deuoure the Pith and Marrow of it, and so make it Hollow; But meddle not with the Barke, because to them it is bitter.

There were, in Ancient Time, Vines, of farre greater Bodies, than we know any; For there haue beene Cups made of them, and an Image of Iupiter. But it is like they were Wilde-Vines; For the Vines, that they vse for Wine, are so often Cut, and so much Digged and Dressed, that their Sap spendeth into the Grapes, and so the Stalke cannot increase much in Bulke. The Wood of Vines is very durable, without Rotting. And that which is strange, though no Tree hath the Twigges, while they are greene, so brittle, yet the Wood dryed is extreme Tough; And was vsed by the Captaines of Armies, amongst the Romans, for their Cudgells.

It is reported, that in some Places, Vines are suffered to grow like Herbs, spreading vpon the Ground; And that the Grapes of those Vines are very great. It

were good to make tryall, whether Plants that vse to be borne vp by Props, will not put forth greater Leaues, and greater Fruits, if they be laid along the Ground; As Hops, l-y, Wood bine, &c.

Quinces, or Apples, &c. if you will keepe them long, drowne them in Honey; But because Honey (perhaps) will giue them a Taste Ouerlushious, it were good to make Triall in Powder of Sugar; Or in Syrrup of Wine onely Boyled to Height. Both these would likewise be tried in Orenges, Limons, and Pomgranats; For the Powder of Sugar, and Syrrup of Wine, will serue for more times than once.

The Conseruation of Fruit would be also tried in Vessells, filled with fine Sand, or with Powder of Chalke; Or in Meale and Flower; Or in Dust of Oake-wood; Or in Mill.

Such Fruits, as you appoint for Long Keeping, you must gather before they be full Ripe; And in a Faire and Dry Day, towards Noone; And when the Wind bloweth not South; And when the Moone is vnder the Earth; And in Decrease.

Take Grapes, and hang them in an Empty Vessell, well Stopped; And set the Vessell, not in a Cellar, but in some dry Place; And it is said, they will last long. But it is reported by some, they will keepe better, in a Vessell halfe full of Wine, so that the Grapes touch not the Wine.

It is reported, that the Preseruing of the Stalke, helpeth to preserue the Grape; Especially if the Stalke be put into the Pith of Elder, the Elder not touching the Fruit.

It is reported by some of the Ancients, that Fruit put in Bottles, and the Bottles let downe into Wells vnder Water, will keepe long.

Of Herbs and Plants, some are good to eat Raw; As Lettuce, Endiue, Purslane, Tarragon, Cresses, Cucumbers, Muske-Melons, Radish, &c. Others onely after they are Boyled, or haue Passed the Fire; As Parsley, Clary, Sage, Parsnips, Turnips, Asparagus, Artichoakes, (though they also being young are eaten Raw:) But a Number of Herbs are not Esculent at all; As Worme-wood, Grasse, Greeke-Corne, Centory, Hyssope, Lauender, Balme, &c. The Causes are, for that the Herbs, that are not Esculent, do want the two Tastes, in which

Nourishment resteth; Which are, Fat, and Sweet; And haue (contrariwise) Bitter and Ouer-strong Tastes, or a Iuyce so Crude, as cannot be ripened to the degree of Nourishment. Herbes and Plants, that are Esculent Raw, haue Fatnesse, or Sweetnesse, (as all Esculent Fruits;) Such are Onions, Lettuce, &c. But then it must be such a Fatnesse, (for as for Sweet Things, they are in effect alwayes Esculent,) as is not Ouer-grosse, and Loading of the Stomach; For Parsnips and Leeks haue Fatnesse; But it is too Grosse and Heauy without Boyling. It must be also in a Substance somewhat Tender; For we see Wheat, Barley, Artichoakes, are no good Nourishment, till they haue Passed the Fire; But the Fire doth ripen, and maketh them soft and tender, and so they become Esculent. As for Radish, and Tarragon, and the like, they are for Condiments, and not for Nourishment. And euen some of those Herbes, which are not Esculent, are notwithstanding Poculent; As Hop's, Broome, &c. Quare what Herbs are good for Drinke, besides the two aforenamed; For that it may (perhaps) ease the Charge of Brewing, if they make Beere to require lesse Malt, or make it last longer.

Parts fit for the Nourishment of Man, in Plants, are, Seeds, Roots, and Fruits; But chiefly Seeds, and Roots. For Leaues, they giue no Nourishment, at all, or very little: No more doe Flowers, or Blossomes, or Stalkes. The Reason is, for that Roots, and Seeds, and Fruits, (in as much as all Plants consist of an Oyly and Watry Substance commixed,) haue more of the Oyly Substance; And Leaues, Flowers, &c. of the Watry. And secondly, they are more Concocted; For the Root, which continueth euer in the Earth, is still Concocted by the Earth. And Fruits, and Graines, (we see) are halfe a yeare, or more, in Concocting; Whereas Leaues are out, and Perfect in a Moneth.

Plants (for the most part) are more strong, both in Taste, and Smell, in the Seed, than in the Leafe, and Root. The Cause is, for that in Plants, that are not of a Fierce and Eager Spirit, the Vertue is increased by Concoction, and Maturation, which is euer most in the Seed; But in Plants, that are of a Fierce and Eager Spirit, they are stronger whilest the Spirit is enclosed in the Root; And the Spirits doe but weaken, and dissipate, when they come to the Aire, and Sunne; As we see it in Onions, Garlicke, Dragon, &c. Nay there be Plants, that

haue their Roots very Hot, and Aromaticall; And their Seeds rather Insipide; As Ginger. The Cause is (as was touched before,) for that the Heat of those Plants is very Dissipable; which vnder the Earth is contained and held in; But when it commeth to the Aire, it exhaleth.

The Iuyces of Fruits are either Watry, or Oyly. I reckon amongst the Watry, all the Fruits out of which Drinke is expressed; As the Grape, the Apple, the Peare, the Cherry, the Pomgranate, &c. And there are some others, which, though they be not in vse for Drinke, yet they appeare to be of the same Nature; As Plummes, Serukes, Mulberries, Rasps, Orenges, Limons, &c. And for those Iuyces, that are so fleshy, as they cannot make Drinke by Expression, yet (perhaps) they may make Drinke by Mixture of Water;

Pocula{que} admistis imitantur vitea Sorbis.

And it may be Heps and Brier-Berries would doe the like. Those that haue Oyly Iuyce, are; Oliues, Almonds, Nuts of all sorts, Pine-Apples, &c. And their Iuyces are all Inflammable. And you must obserue also, that some of the Watry Iuyces, after they haue gathered Spirit, will Burne and Enflame; As Wine. There is a Third Kinde of Fruit, that is sweet, without either Sharpnesse, or Oylinesse: Such as is the Fig, and the Date.

It hath beene noted, that most Trees, and specially those that beare Mast, are fruitfull but once in two yeares. The Cause (no doubt) is, the Expence of Sap; For many Orchard-Trees, well Cultured, will beare diuers yeares together.

There is no Tree, which besides the Naturall Fruit, doth beare so many Bastard-Fruits, as the Oake doth: For besides the Acorne, it beareth Galls, Oake-Apples, and certaine Oake-Nuts, which are Inflammable; And certaine Oake-Berries, sticking close to the Body of the Tree, without Stalke. It beareth also Misseltoe, though rarely. The Cause of all these may be, the Closenesse and Solidenesse of the Wood, and Pith of the Oake; Which maketh seuerall Iuyces finde seuerall Eruptions. And therefore, if you will deuise to make any Super-Plants, you must euer giue the Sap Plentifull Rising, and Hard Issue.

There are two Excrescences, which grow vpon Trees; Both of them in the Nature of Mushromes: The one the Romans called Boletus; Which groweth vpon

the Roots of Oakes; And was one of the Dainties of their Table; The other is Medicinall, that is called Agaricke, (whereof we haue spoken before,) which groweth vpon the Tops of Oakes; Though it be affirmed by some, that it groweth also at the Roots. I doe conceiue, that many Exerescences of Trees grow chiefly, where the Tree is dead, or faded; For that the Naturall Sap of the Tree, corrupteth into some Preternaturall Substance.

The greater Part of Trees beare Most, and Best, on the Lower Boughs; As Oakes, Figs, Wall-Nuts, Peares, &c. But some beare Best on the TopBoughes; As Crabs, &c. Those that beare best below, are such, as Shade doth more good to, than Hurt. For generally all Fruits beare best lowest; Because the Sap tireth not, hauing but a short Way: And therefore in Fruits spred vpon Walls, the Lowest are the Greatest, as was formerly said; So it is the Shade that hindereth the Lower Boughes; Except it be in such Trees, as delight in Shade; Or at least beare it well. And therfore, they are either Strong Trees, as the Oake; Or else they haue large Leaues, as the Wallnut and Fig; Or else they grow in Pyra-is, as the Peare. But if they require very much Sunne, they beare best on the Top; As it is in Crabs, Apples, Plummes, &c.

There be Trees, that beare best, when they begin to be Old; As Almonds, Peares, Vines, and all Trees that giue Mast. The Cause is, for that all Trees that beare Mast, haue an Oyly Fruit; And Young Trees haue a more Watry Iuyce, and lesse Concocted; And of the same kinde also is the Almond. The Peare likewise, though it be not Oyly, yet it requireth much Sap, and well Concocted; For we see it is a Heauy Fruit, and Solide; Much more than Apples, Plummes, &c. As for the Vine, it is noted, that it beareth more Grapes when it is Young; But Grapes that make better Wine, when it is Old; For that the Iuyce is better Concocted: And wee see that Wine is Insflammable; So as it hath a kinde of Oylinesse. But the most Part of Trees, amongst wich are Apples, Plummes, &c. beare best when they are Young.

There be Plants, that haue a Milke in them, when they are Cut; As Figs, Old Lettuce, Sowe-Thistles, Spurge, &c. The Cause may be an Inception of Putrefaction: For those Milkes haue all an Acrimony; though one would thinke

they should be Lenitiue. For if you write vpon Paper, with the Milke of the Fig, the Letters will not be seene, vntill you hold the Paper before the Fire, and then they wax Browne; Which sheweth that it is a Sharpe or Fretting Iuyce: Lettuce is thought Poysonous, when it is so Old, as to haue Milke; Spurge is a kinde of Poyson in it Selfe; And as for Sowe-Thistles, though Coneyes eat them, yet Sheepe and Cattell will not touch them; And besides the Milke of them, rubbed vpon Warts, in short time, weareth them away: Which sheweth the Milke of them to be Corrosine. We see also, that Wheat, and other Corne sowen, if you take them forth of the Ground, before they sprout, are full of Milke; And the Beginning of Germination is euer a Kinde of Putrefaction of the Seed. Euphorbium also hath a Milke, though not very white, which is of a great Acrimony. And Saladine hath a yellow Milke, which hath likewise much Acrimony; For it cleanseth the Eyes. It is good also for Cataracts.

Mushromes are reported to grow, as well vpon the Bodies of Trees, as vpon their Roots, or vpon the Earth: And especially vpon the Oake. The Cause is, for that Strong Trees, are towards such Excresc — ces, in the Nature of Earth; And therfore put forth Mosse, Mushromes, and the like.

There is hardly found a Plant, that yeeldeth a Red Iuyce, in the Blade, or Eare; Except it be the Tree that beareth Sanguis Draconis: Which groweth (chiefly) in the Island Soquotra: The Herb Amaranthus, (indeed,) is Red all ouer; And Brasill is Red in the Wood: And so is Red Sunders. That Tree of the Sanguis Draconis, groweth in the forme of a Sugar-loafe. It is like, that the Sap of that Plant, concocteth in the Body of the Tree. For woe see that Grapes, and Pomegranats, are Red in the Iuyce, but are Greene in the Teare: And this maketh the Tree of Sanguis Draconis, lesser towards the Top; Because the Iuyce hasteneth not vp; And besides it is very Astringent; And therefore of Slow Motion.

It is reported, that Sweet Mosse, besides that vpon the Apple-Trees, groweth likewise (sometimes) vpon Poplars; And yet (generally) the Poplar is a Smooth Tree of Barke, and hath little Mosse. The Mosse of the Larix Tree burneth also

Sweet, and sparkleth in the Burning, Quaere of the Mosses of Oderate Trees; As Cedar, Cypres, Lignum Aloës, &c.

The Death that is most without Paine, hath been noted to be, vpon the Taking of the Petium of Hemloche; which in Humanity was the Forme of Execution of Capitall Offenders in Athens. The Poyson of the Aspe, that Cleopatra vsed, hath some affinity with it. The Cause is, for that the Torments of Death are chiefly raised by the Strife of the Spirits; And these Vapours quench the Spirits by Degrees; Like to the Death of an extreme Old Man. I conceiue it is lesse Painfull than Opium:, because Opium hath Parts of Heat mixed.

There be Fruits, that are Sweet before they be Ripe; As Mirabolanes; So Reuuell-Seeds are Sweet before they ripen, and after grow Spicy. And some neuer Ripen to be Sweet; As Tamarinds, Berberries, Crabs, Sloes, &c. The Cause is, for that the former Kinde haue — eh and subtill Heat, which causeth Earely Sweetnesse; The latter haue a Cold and Acide Iuyce, which no Heat of the Sunne can sweeten. But as for the Mirabelane, it hath Parts of Contrary Natures; For it is Sweet, and yet Astringont.

There bee few Herbes that haue a Salt Taste; And contrariwise all Bloud of Liuing Creatures hath a Saltnesse: The Cause may be, for that Salt, though it be the Audiment of Life, yet in Plants the Originall Taste remaineth not; For you shall haue them Bitter, Sowre, Sweet, Biting, but seldome Salt: But in Liuing Creatures, all those High Tastes may happen to be (sometimes) in the Humours, but are seldome in the Flesh, or Substance; Because it is of a more Oyly Nature; which is not very Susceptible of those Tastes; And the Saltnesse it selfe of Bloud, is but a light, and secret Saltnesse: And euen among Plants, some doe participate of Saltnesse, as Alga Marina, Sampire, Scorny-Grasse, &c. And they report, there is, in some of the Indian-Seas, a Swimming Plant, which they call Salgazus, spreading ouer the Sea, in such sort, as one would thinke it were a Meadow. It is certaine, that out of the Ashes of all Plants, they extract a Salt, which they vse in Medicines.

It is reported by one of the Ancients, that there is an Herb growing in the Water, called Lincostis, which is full of Prickles: This Herbe putteth forth

another small Herbe out of the Leafe; which is imputed to some Moisture, that is gathered betweene the Prickles, which Putrified by the Sunne, Germinateth. But I remember also I haue seene, for a great Rarity, one Rose grow out of another, like Honey-Suckles, that they call Top and Top-gallants.

Barley, (as appeareth in the Malting,) being steeped in Water three dayes, and afterwards the Water drained from it, and the Barley turned vpon a dry floare, will sprout, halfe an Inch long at least: And if it be let alone, and not turned, much more; vntill the Heart be out. Wheat will doe the same. Try it also with Pease, and Beanes. This Experiment is not like that of the Orpin, and Semper-Vine; For there it is of the old Store, for no Water is added; But here it is nourished from the Water. The Experiment would be further driuen: For it appeareth already, by that which hath beene said, that Earth is not necessary to the first Sprouting of Plants; And we see that Rose-Buds set in Water, will Blow: Therefore try whether the Sprouts of such Graines may not be raised to a further Degree; As to an Herbe, or Flower, with Water onely; Or some small Commixture, of Earth: For if they will, it should seeme by the Experiments before, both of the Malt, and of the Roses, that they will come far faster on in Water, than in Earth: For the Nourishment is easilier drawne out of Water, than out of Earth. It may giue some light also, that Drinke infused with Flesh, as that with the Capon, &c. will nourish faster and easilier, than Meat and Drinke together. Try the same Experiment with Roots, as well as with Graines: as for Example, take a Turnip, and steepe it a while, and then dry it, and see whether it will sprout.

Malt in the Dren-bing will swell; And in such a manner, as after the Putting forth in Sprouts, and the drying vpon the Keele, there will be gained at least a Bushell in eight, and yet the Sprouts are rubbed off; And there will be a Bushell of Dust besides the Malt: Which I suppose to be, not onely by the loose, and open Laying of the Parts, but by some Addition of Substance, drawne from the Water, in which it was steeped.

Malt gathereth a Sweetnesse to the Taste, which appeareth yet more in the Wort. The Dulcoration of Things is worthy to be tried to the full; For that

Dulcoration importeth a degree to Nourishment: And the Making of Things Inalimentall, to become Alimentall, may be an Experiment of great Profit, for Making new Victuall.

Most Seeds in the Growing, leaue their Huske or Rinde about the Root; But the Onion will carry it vp, that it will be like a Cap vpon the Top of the Young Onion. The Cause may be, for that the Skin or Huske is not easie to breake; As we see by the Pilling of Onions, what a Holding Substance the Skin is.

Plants, that haue Curled Leaues, doe all abound with Moisture; Which commeth so fast on, as they cannot spread themselues Plaine, but must needs gather together. The Weakest Kinde of Curling is Roughnesse; As in Clary, and Burre. The Second is Curling on the Sides; As in Lettuce, and Young Cabbage: And the Third is Folding into an Head; As in Cabbage full growne, and Cabbage-Lettuce.

It is reported, that Firre, and Pine, especially if they be Old and Putrified, though they shine not, as some Rotten Woods doe, yet in the sudden Breaking they will sparkle like Hard Sugar.

The Roots of Trees doe, (some of them,) put downwards deepe into the Ground; As the Oake, Pine, Firre, &c. Some spread more towards the Surface of the Earth; As the Ash, Cypresse-Tree, Oline, &c. The Cause of this latter may be, for that such Trees as loue the Sunne, doe not willingly descend farre into the Earth; And therefore they are (commonly) Trees, that shoot vp much; For in their Body, their desire of Approach to the Sunne, maketh them spread the lesse. And the same Reason, vnder Ground, to auoid Recesse from the Sunne, maketh them spread the more. And wee see it commeth to passe in some Trees, which haue beene planted too deepe in the Ground, that forloue of Approach to the Sunne, they forsake their first Root, and put out another more towards the Top of the Earth. And wee see also, that the Oliue is full of Oylie Iuyce; And Ash maketh the best Fire; And Cypresse is an Hot Tree. As for the Oake; which is of the former sort, it loueth the Earth, And therefore groweth slowly. And for the Pine, and Firre likewise, they haue so much Heat in themselues, as they need lesse the Heat of the Sunne. There be Herbs also, that haue the same difference;

As the Herbe they call Morsus Diaboli; Which putteth the Root downe so low, as you cannot pull it vp without Breaking; Which gaue Occasion to the N-me, and — ; For that it was said, it was so wholesome a Root, that the Deuill, when it was gathered, bit — for Enny. And some of the Ancients doe report, that there was a Goodly Firre; (which they desired to remoue whole,) that had a Root vnder Ground eight Cubits deepe; And so the Root came vp broken.

It hath beene obserued, tha-a Branch of a Tree, being Vnberked some space at the Botome, and so set into the Ground, hath growen; Euen of such Trees, as if the Branch were set with the Barke on, they would not grow; yet co — driwise we see, that a Tree-ared round in the Body, aboue Ground, will die. The Cause may be, for that the Vnbarke Part draweth the Nourishment best, but the Barke continueth it only.

Grapes will continue Fresh, and Moist, all Winter long, if you hang them, Cluster by Cluster, in the Roofe of a Warme Roome; Especially, it when you gather the Cluster, you take off with the Cluster some of the Stocke.

The Reed or Cane is a Watry Plant, and groweth not but in the Water; It hath these Properties; That it is Hollow; That it is Knuckled both Stalke, and Root; That being Drie, it is more Hard and Fragile, than other Wood; That it putteth forth no Boughs. though many Stalkes come out of one Root. It differeth much in Greatnesse; The smallest being fit for Thatching of Houses; And Stopping the Chinkes of Ships; Better than Glew, or Pitch. The Second Bignesse, is vsed for Angle-Rods, and Staues; And in China for beating of Offenders vpon the Thighs. The differing Kindes of them are; The Common Reed; The Cassia Fistula; And the Sugar-Reed. Of all Blants, it boweth the easiest, and riseth againe. It seemeth, that amongst Plants, which are nourished with Mixture of Earth and Water, it draweth most Nourishment from Water; which maketh it the Smoothest of all others in Barke; And the Hollowest in Body.

The Sap of Trees, when they are let Bloud, is of differing Natures. Some more Watry and Cleare; As that of Vines; of Beeches; of Peares. Some Thicke; As Apples. Some Gummis; As Cherries. Some Frathie, As Elmes. Some Milkie; As — In Mulberries, the Sap seemeth to be (almost) towards the Barke only; For

if you cut the Tree, a little into the Barke, with a Stone, it will come forth; If you pierce it deeper with a Toole, it will be drie. The Trees, which haue the Moistest Iuyces in their Fruit. haue commonly the Moistest Sap in their Body; For the Vines and Peares are very Moist; Apples somes hat more Spongie: The Milke of the Figge hath the Qualitie of the R — nea-, to gather Cheese; And so haue certaine Sonre Herbs wherewith they make Cheese in Lent.

The Timber and Wood are, in some Trees, more Cleane, in some more Kn — tie: And it is a good Triall. to trie it by Speaking at one End, and Laying the -are at the Other: For if it he Kn — tie, the Voice will not passe well. Some haue the Veines more varied, and chamlotted; As Oake, whereof Wainscat it made; Maple, whereof Trenchers are made. Some more smooth, as Firre, and Walnnt: Some doe more easily breed Wormes and Spiders; Some more hardly, as it is said of Irish Trees: Besides, there be a Number of Differences that concerne their Vse; As Oake, Cedar, and Chesu-t, are the best Builders: Some are best for Ploughs Timber; As Ash; Some for Peeres, that are sometimes wet, and sometimes drie; As Elme: Some for Planchers; As Deale: Some for Tables, Cupboard, and Desks; As Wannts: Some for Ship Timber; As Oakes that grow in Moist Grounds; For that maketh the Timber Tough, and not apt to rift with Q-d-an — Where in English and Irish Timber are thought — excell; Some for Mosts of Ships; As Firre, and Pine, because of their Length, Straightnesse, and Lightnesse: Some for Pale; As Oake: Some for Fuell; As Ash: And so of the rest.

The Comming of Trees and Plants in certaine Regions, and net in others, is sometimes Casuall: For many haue beene translated, and haue prospered well; As Damaske-Roses, that haue not beene knowne in England aboue an hundred yeares, and now are so common. But the liking of Plants in certaine Soiles, more than in others, is meerly Naturall; As the Firre and Pine loue the Mountaines; The Poplar; Willow, Sallow, and Alder, loue Riuers, and Moist Places: The Ash loueth Coppices; But is best in Standards alone: luniper loueth Chalke; And so doe most FruitTrees: Sampire groweth but upon Rocks: Reeds and Ofiers grow where they are washed with Water: The Vine loueth Sides of Hills, turning vpon the South-East Sun, &c.

The Putting forth of certaine Herbs discouereth of what Nature the Ground where they put forth, is: As Wilde Thyme sheweth good Feeding Ground for Cattell, Betony and Strawberries shew Grounds fit for Wood: Ca — mill sheweth Mellow Grounds fit for Wheat. Mustard Seede, growing after the Plough, sheweth a good Strong Ground also for Wheat: Burnet sheweth good Meadow: And the like.

There are found, in diuers Countries, some other Plants, that grow out of Trees and Plants, besides Misseltes: As in Syria, there is an Herbe called Cassytas that groweth out of tall Trees, and windeth it selfe about the same Tree where it groweth; And sometimes about Thornes. There is a kinde of Polypode, that groweth out of Trees, though it windeth not. So likewise an Herbe called Fannes, vpon the Wilde Oline. And an Herbe called Hippopha —— vpon the Fullers Thorne; Which, they say, is good for the Falling Sicknesse.

It hath beene ob-rerue-, by -ome or the Ancients, that howsoeuer Cold and Easterly Winds, are thought to be great Enemies to Fruit; yet neuerthelesse South Winds are also found to doe Hure; Especially in the Blossoming time; And the more, if Showers follow. It seemeth, they call forth the Moisture too fast. The West Winds are the best. It hath beene obserued also that Greene and Open Winters doe hurt Trees; Insomuch as if two or three such Winters come together, Almond-Trees, and some other Trees, will dye. The Cause is the same with the former, because the Lust of the Earth ouerspendeth it selfe; Howsoeuer some other of the Ancients haue commended Warme Winters.

Snowes, lying long, cause a Fruitfull Yeare: For first, they keepe in the Strength of the Earth; Secondly, they water the Earth, better than Raine; For in Snow, the Earth doth (as it were) sucke the Water, as out of the Teate. Thirdly, the Moisture of Snow is the finest Moisture; For it is the Froth of the Cloudy Waters.

Showers, if they come a little before the Ripening of Fruits, doe good to all Shoculent and Moist Fruits; As Vines, Oliues, Pomegranates; Yet it is rather for Plenty, than for Goodnesse; For the best Wines are in the Driest Vintages: Small Showers are likewise good for Corne, so as Parching Heats come not vpon them.

Generally, Night-Showers are better than Day-Showers; For that the Sunne followeth not so fast vpon them. And we see, euen in Watring by the Hand, it is best, in Summer time, to water in the Euening.

The Differences of Earths, and the Triall of them, are worthy to be diligently inquired. The Earth, that with Showers doth easiliest Soften, is commended; And yet some Earth of that kinde will be very Dry, and Hard before the Showers. The Earth that casteth vp from the Plough, a Great Clod, is not so good, as that, which casteth vp a Smaller Clod. The Earth, that putteth forth Mosse easily, and may bee called Mouldy, is not good. The Earth, that smelleth well vpon the Digging, or Ploughing, is commended; As containing the Iuyce of Vegetables almost already prepared. It is thought by some, that the Ends of low Raine-Bowes, fall more vpon one kinde of Earth than vpon another: As it may well be; For that that Earth is most Roscide: And therfore it is commended for a Signe of good Earth. The Poorenesse of the Herbs, (it is plaine,) shew the Poorenesse of the Earth; And especially if they be in Colour more darke: But if the Herbs shew Withered, or Blasted at the Top, it sheweth the Earth to be very Cold: And so doth the Mossinesse of Trees. The Earth, whereof the Grasse is soone Parched with the Sun, and Toasted, is commonly Forced Earth, and Barren in his owne Nature. The Tender, Chessoine, and Mellow Earth, is the best; Being meere Mould, betweene the two Extreames of Clay, and Sand; Especially if it be not Loamy, and Binding. The Earth, that after Raine, will scarce be Ploughed, is commonly Fruitfull; For it is Cleaning, and full of Iuyce.

It is strange, which is obserued by some of the Ancients, that Dust helpeth the Fruitfulnesse of Trees; And of Vines, by name: Insomuch as they catt Dust vpon them of purpose. It should seeme, that that Powdring, when a Shower commeth, maketh a kinde of Soyling to the Tree, being Earth and Water, finely laid on. And they note, that Countries, where the Fields and Wayes are Dusty, beare the best Vines.

It is commended by the Ancients, for an Excellent Helpe to Trees, to lay the Stalks and Leaues of Lupines about the Roots; Or to Plough them into the Ground, where you will sowe Corne. The Burning also of the Cuttings of Vines,

and Casting them vpon land, doth much Good. And it was generally receiued of old, that the Dunging of Grounds, when the West Wind bloweth, and in the Decrease of the Moone, doth greatly helpe; The Earth (as it seemeth) being then more thirsty, and open, to receiue the Dung.

The Grafting of Vines vpon Vines, (as I take it,) is not now in vse: The Ancients had it, and that three wayes: The First was Insition, which is the Ordinary Manner of Grafting: The Second was Terebration, through the Middle of the Stocke, and Putting in the Cions there: And the Third was Paring of two Vines, that grow together, to the Marrow, and Binding them close.

The Diseases and ill Accidents of Corne, are worthy to be enquired; And would be more worthy to be enquired, if it were in Mens Power to helpe them; Whereas many of them are not to be remedied. The Mildew is one of the Greatest; which (out of question) commeth by Closenesse of Aire; And therefore in Hills, or large Champaigne Grounds, it seldome commeth; Such as is with vs York's Worad. This cannot be remedied, otherwise than that in Countries of Small Enclosure, the Grounds be turned into larger Fields: Which I haue knowne to doe good in some Farmes. Another Disease is the Putting forth of Wilde Oats, whereinto Corne oftentimes, (especially Barley,) doth degenerate. It happeneth chiefly from the Weaknesse of the Graine that is sowen; For if it be either too Old, or Mouldy, it will bring forth Wilde Oats. Another Disease is the Saciety of the Ground; For if you sow one Ground still with the same Corne, (I meane not the same Corne that grew vpon the same Ground,) but the same Kinde of Graine; (As Wheat, Barley, &c.) it will prosper but poorely: Therefore besides the Resting of the Ground, you must vary the Seed. Another ill Accident is, from the Winds, which hurt at two times; At the Flowring, by Shaking off the Flowers; And at the full Ripening, by Shaking out the Corne. Another ill Accident is, Drouth, at the Spindling of the Corne; Which with vs is rate; But in Hotter Countries, common: Insomuch as the Word, Calamitas, was first deriued from Calamus, when the Corne could not get out of the Stalke. Another ill Accident is, Ouer-wet at Sowing-Time; which with vs breedeth much Dearth; Insomuch as the Corne neuer commeth vp; And (many times) they are forced to resow

Sommer-Corne, where they sowed Winter-Corne. Another ill Accident is Bitter Frosts, continued, without Snow; Especially in the Beginning of the Winter, after the Seed is new Sowen. Another Disease is Wormes; which sometimes breed in the Root, and happen vpon Hot Sunnes, and Showers, immediately after the Sowing; And another Worme breedeth in the Eare it Selfe; Especially when Hot Sunnes breake often out of Clouds. Another Disease is Weeds; And they are such, as either Choake, and Ouershadow the Corne, and beare it downe; Or starue the Corne, and deceiue it of Nourishment. Another Disease is, Ouer-Rancknesse of the Corne; Which they vse to remedy, by Mowing it after it is come vp; Or putting Sheepe into it. Another ill Accident is Laying of Corne with great Raines, neare, or in Harnest. Another ill Accident is, if the Seed happen to haue touched Oyle, or any Thing, that is Fat; For those Substances haue an Antipathy with Nourishment of Water.

The Remedies of the Diseases of Corne haue beene obserued as followeth. The Steeping of the Graine, before Sowing, a little time in Wine, is thought a Presernatiue: The Mingling of Seed-Corne with Ashes, is thought to be good: The Sowing at the Wane of the Moone, is thought to make the Corne sound: It hath not beene practised, but it is thought to be of vse, to make some Miscellane in Corne; As if you sow a few Beanes with Wheat, your Wheat will be the better. It hath beene obserued, that the Sowing of Corne with Honsleeke, doth good. Though Graine, that toucheth Oyle, or Fat, receiueth hurt, yet the Steeping of it, in the Dregs of Oyle, when it beginneth to Putrifie, (which they call Amurca,) is thought to assure it against Wormes. It is reported also, that it Corne be Mowed, it will make the Graine Longer, but Emptier, and hauing More of the Huske.

It hath beene noted, that Seed of a yeare old, is the Best; And of two or three yeares is Worse, And that which is more Old, is quite Barren; Though (no doubt) some Seeds and Graines last better than others. The Corne, which in the Vanning lieth lowest, is the best; And the Corne, which broken or bitten retaineth a little Yellownesse, is better than that which is very White.

It hath beene obserued, that of all Roots of Herbs, the Root of Sorrell goeth the furthest into the Earth; Insomuch as it hath bin knowne to go three Cubits

deepe; And that it is the Root that continueth fit (longest) to be set againe, of any Root that groweth. It is a Cold and Acide Herbe, that (as it seemeth) loueth the Earth, and is not much drawne by the Sunne.

It hath beene obserued, that some Herbs like best, being watred with Salt-Water; As Radish, Beet, Rew, Pennyroyall; This Triall would be extended to some other Herbs; Especially such as are Strong; As Tarragon, Mustard-Seed, Rocket, and the like.

It is strange that is generally receiued, how some Poysonous Beasts affect Odorate and Wholesome Herbs; As that the Snake loueth Fennell; That the Toad will be much vnder Sage; That Frogs will be in Cinque foile. It may be, it is rather the Shade, or other Couerture, that they take liking in, than the Vertue of the Herbe.

It were a Matter of great Profit, (saue that I doubt it is too Coniecturall to venture vpon,) if one could discerne, what Corne, Herbs, or Fruits, are like to be in Plenty, or Scarcity, by some Signes and Prognosticks. in the Beginning of the Yeare: For as for those, that are like to be in Plenty, they may be bargained for, vpon the Ground; As the Old Relation was of Thales; who to shew how easie it was for a Philosopher to be rich, when he fore-saw a great Plenty of Oliues, made a Monopoly of them. And for Scarcity, Men may make Profit in keeping better the Old Store. Long Continuance of Snow is beleeued to make a Fruitfull Yeare of Corne: An Earely Winter, or a very Late Winter, a Barren Yeare of Corne: An Open and Serene Winter, an ill Yeare of Fruit: These we haue partly touched before: But other Prognostickes of like Nature are diligently to be enquired.

There seeme to be, in some Plants, Singularities, wherein they differ from all Other; The Oliue hath the Oyly Part, only on the Outside; Wheras all other Fruits haue it in the Nut, or Kernell. The Firre hath (in effect) no Stone, Nut, nor Kernest; Except you will count the little Graines Kernells. The Pom granate and Pine Apple haue onely, amongst Fruits, Graines distinct in seuerall Cells. No Herbs haue Curled Leaues, but Cabbage, and Cabbage-Lettuce. None haue double Leaues, one belonging to the Stalke, another to the Fruit or Seed, but the

Artichoke: No Flower hath that kinde of Spread that the Woodbine hath. This may be a large Field of Contemplation; For it sheweth that in the Frame of Nature, there is, in the Producing of some Species, a Composition of Matter, which happeneth oft, and may be much diuersified: In others, such as happeneth rarely, and admitteth little Variety: For so it is likewise in Beasts: Dogs haue a Resemblance with Wolnes, and Foxes; Horses with Asses, Kine with Bustes; Hares with Coneyes; &c. And so in Birds: Kites and Kastrells haue a Resemblance with Hawkes; Common-Doues with Ring-Dea-s, and Tortles; Black-Birds with Thrushes, and Manisses; Crowes with Bauens, Dawes, and Choughas, &c. But Elephants, and Swine amongst Beasts; And the Bird of Paradise, and the Peacocke amongst Birds; And some few others; haue sea — any other Species, that haue Affinity with them.

We leaue the Description of Plants, and their Vertues, to Herballs, and other like Bookes of Naturall History: Wherein Mens Diligence hath b —— great, euen to Curiosity: For our Experiments are onely such as doe euer ascend a Degree, to the Deriuing of Causes, and Extracting of Axiomes, which, wee are not ignorant, but that some, both of the Ancient, and Modeme Writers, haue also labôured, But their Causes, and Axiomes, are so full of Imagination, and so infected with the old Receiued Theories, as they are meere Inquinations of Experience, and Concoct it not.

It hath beene obserued by some of the Ancients, that Skins, (especially of — ams, newly pulled off, and applied to the Wounds of Stripts, doe keepe them from Swelling, and Exulcerating; And likewise Heade them, and Close them vp; And that the Whites of Eggs do the same. The Cause is a Temperate Conglutination; For both Bodies are Glommy, and Viscous, and doe bridle the Des-uxe of Humours to the Hu — , without Penning them in too much.

You may turne (almost) all Flesh into a ——— ——— , if you take Flesh, and cut it into Peeces, and put the Peeces into a Glasse couered with Parchment; And so let the Glasse stand six or seuen Houres — Boyling Water. It may be an Experiment of Profit, for Making of Fat, or Grease, for many vses; But then it

must be of such Flesh as is not Edible; As Horses, Dogs, Beares, Foxes, Bodgers, &c.

It is reported by one of the Ancients, that New Wine, put into Vessells well stopped, and the Vessells let downe into the Sea, will accelerate very much, the Making of them Ripe, and Potable. The same would be tried in Wort.

Beasts are more Hairy than Men; And Sauage Man more than Ciuill; And the Plumage of Birds exceedeth the Pilosity of Beasts. The Cause of the Smoothnesse in Men, is not any Abundance of Heat, and Moisture, though that indeed causeth Pilosity; But there is requisite to Pilosity, not so much Heat and Moisture, as Excrementitious Heat and Moisture: (For whatsoeuer assimilateth, goeth not into the Haire:) And Excrementitious Moisture aboundeth most in Beasts, and Men that are more Sauage. Much the same Reason is there of the Plumage of Birds; For Birds assimilate lesse, and excerne more than Beasts: For their Excrements are euer liquid, and their Flesh (generally) more dry: Besides, they haue not Instruments for Vrine; And so all the Excrementitious Moisture goeth into the Feathers: And therefore it is no Maruell, though Birds bee commonly better Meat than Beasts, because their Flesh doth assimilate more finely, and secerneth more subtilly. Againe, the Head of Man hath Haire vpon the first Birth, which no other Part of the Body hath. The Cause may be Want of Perspiration: For Much of the Matter of Haire, in the other Parts of the Body, goeth forth by Insensible Perspiration; And besides, the Skull being of a more solide Substance, nourisheth and assimilateth lesse, and excerneth more: And so likewise doth the Chinne; We see also that Haire commeth not vpon the Palmes of the Hands, nor Soales of the Feet; Which are Parts more Perspirable. And Children likewise are not Hairy, for that their Skins are more Perspirable.

Birds are of Swifter Motion than Beasts: For the Flight of many Birds is Swifter, than the Race of any Beasts. The Cause is, for that the Spirits in Birds, are in greater Proportion, in comparison of the Bulke of their Body, than in Beasts: For as for the Reason that some giue, that they are partly Carried, whereas Beasts goe, that is Nothing; For by that Reason Swimming should be

swifter, than Running: And that Kinde of Carriage also, is not without Labour of the Wing.

The Sea is Clearer, when the North wind bloweth, than when the South-wind. The Cause is, for that Salt-Water hath a little Oylinesse in the Surface thereof; As appeareth in very Hot Daies: And againe, for that the Southerne Wind relaxeth the Water somewhat; As no Water Boyling is so Cleare as Cold Water.

Fire burneth Wood, making it first Luminous; Then Blacke and Brittle: And lastly, Broken and Incinerate: Sealding Water doth none of these. The Cause is, for that by Fire, the Spirit of the Body is first Refined, and then Emitted; Whereof the Refining, be Attenuation causeth the Light; And the Emission, first the Fragilitie, and after the Dissolution into Ashes: Neither doth any other Body enter: But in Water the Spirit of the Body is not Refined so much; And besides Part of the Water entreth; Which doth increase the Spirit, and in a degree extinguish it: Therefore wee see that Hot Water will quench Fire. And againe wee see, that in Bodies, wherein the Water doth not much enter, but only the Heat passeth, Hot Water worketh the Effects of Fire: As in Egges Boyled, and Roasted, (into which the Water entreth not at all,) there is scarce difference to be discerned; But in Fruit, and Flesh, whereinto the Water entreth, in some part, there is much more difference.

The Bottome of a Vessell of Boyling Water, (as hath beene obserued,) is not very much Heated; So as Men may put their Hand vnder the Vessell, and remoue it. The Cause is, for that the Moisture of Water, as it quencheth Coales, where it entreth; So it doth allay Heat, where it toucheth: And therefore note well, that Moisture, although it doth not passe thorow Bodies, without Communication of some Substance, (As Heat and Cold doe;) yet it worketh manifest Effects; not by Entrance of the Body, but by Qualifying of the Heat, and Cold; As wee see in this Instance: And wee see likewise, that the Water of Things distilled in Water, (which they call the Bath,) differeth not much from the Water of Things Distilled by Fire: Wee see also, that Pewter-Dishes, with Water in them, will not Melt easily; But without it, they will: Nay wee see more, that Butter, or Oyle, which in themselues are Inflammable, yet by Vertue of their Moisture, will doe the like.

It hath beene noted by the Ancients, that it is dangerous to Picke ones Eare, whilest he Yawneth. The Cause is, for that in Yawning, the Inner Parchment of the Eare is extended, by the Drawing in of the Spirit, and Breath; For in Yawning, and Sighing both, the Spirit is first strongly Drawne in, and then strongly Expelled.

It hath beene obserued by the Ancients, that Sneezing doth cease the Hiccough. The Cause is, for that the Motion of the Hiccough, is a Lifting vp of the Stomacke: which Sneezing doth somewhat depresse, and diuert the Motion another way. For first wee see, that the Hiccough commeth of Fulnesse of Meat, (especially in Children, which causeth an Extension of the Stomacke: Wee see also, it is caused by Acide Meats, or Drinkes, which is by the Pricking of the Stomacke: And this Motion is ceased, either by Diuersion; Or by Detention of the Spirits: Diuersion, as in Sneezing; Detention, as wee see Holding of the Breath, doth helpe somewhat to cease the Hiccough: And putting a Man into an Earnest Studie doth the like; As is commonly vsed: And Vinegar put to the Nostbrills, or Gargarized, doth it also; For that it is Astringent, and inhibiteth the Motion of the Spirits.

Looking against the Sunne, doth induce Sneezing. The Cause; is not the Heating of the Nosthrills; For then the Holding vp of the Nosthrills against the Sunne, though one Winke, would doe it, But the Drawing downe of the Moisture of the Braine: For it will make the Eyes, run with Water; And the Drawing of Moisture to the Eyes, doth draw it to the Nosthrills, by Motion of Consent; And so followeth Sneezing; As contrariwise, the Tickling of the Nosthrills within, doth draw the Moisture to the Nosthrills, and to the Eyes by Consent; For they also will Water. But yet, it hath beene obserued, that if one be about to Sneeze, the Rubbing of the Eyes, till they run with Water, will preuent it. Where of the Cause is, for that the Humour, which was descending to the Nosthrills, is diuerted to the Eyes.

The Teeth are more, by Cold Drinke, or the like, affected, than the other Parts. The Cause is double: The One, for that the Resistance of Bone to Cold, is greater than of Flesh; for that Flesh shrinketh, but the Bone resisteth, whereby

the Cold becommeth more eager: The Other is, for that the Teeth are Parts without Bloud; Whereas Bloud helpeth to qualifie the Cold: And therefore wee see, that the Sinnewes are much affected with Cold; For that they are Parts without Bloud: So the Bones in Sharpe Colds wax Brittle; And therefore, it hath beene seene, that all Contusions of Bones, in Hard Weather, are more difficult to Cure.

It hath been noted, that the Tongue receiueth, more easily, Tokens of Diseases, than the other Parts; As of Heats within, which appeare most in the Blacknesse of the Tongue. Againe, Pied Cattell are spotted in their Tongues, &c. The Cause is, (no doubt,) the Tendernesse of the Part; which thereby receiueth more easily all Alterations, than any other Parts of the Flesh.

When the Mouth is out of Taste, it maketh Things taste, sometimes Salt; Chiefly Bitter; And sometimes Loathsome; But neuer Sweet. The Cause is, the Corrupting of the Moisture about the Tongue; Which many times turneth Bitter, and Salt, and Loathsome; But Sweet neuer; For the rest are Degrees of Corruption.

It was obserued in the Great Plague of the last Yeare, that there were seene, in diuers Ditches, and low Grounds, about London, many Toads, that had Tailes, two or three Inches long, at the least; Whereas Toads (vsually) haue no Tailes at all. Which argueth a great Disposition to Putrefaction in the Soile, and Aire. It is reported likewise, that Roots, (such as Carrets, and Parsuips,) are more Sweet, and Lushious, in Infectious Yeares, than in other Yeares.

Wife Physitians should with all diligence inquire, what Simples Nature yeeldeth, that haue extreme Subtile Parts, without any Mordication, or Acrimony: For they Vndermine that which is Hard; They open that which is Stopped, and Shut; And they expell that which is Offensive, gently, without too much Perturbation. Of this Kinde are Elder-Flowers, which therefore are Proper for the Stone: Of this kinde is the DwarfePine; which is Proper for the laundies: Of this kinde is Harts-Horne; which is Proper for Agues, and Infections: Of this kinde is Piony; which is Proper for Stoppings in the Head: Of this kinde is Fumitory; which is Proper for the Spl — e: And a Number of Others. Generally,

diuers Creatures bred of Putrefaction, though they be somewhat loathsome to take, are of this kinde; As Earth-wormes, Timber-Sowes, Snailes, &c. And I conceiue, that the Trechischs of Vipers, (which are so much magnified,) and the Flesh of Snakes some wayes condited, and corrected, (which of late are growne into some Credite,) are of the same Nature. So the Parts of Beasts Putrified; (as Castereum, and Muske, which haue extreme Subtill Parts,) are to be placed amongst them. We see also that Patrefactions of Plants, (as Agarichs, and lewes —— . are of greatest Vertue. The Cause is, for that Putrefection is the Subtillest of all Motions, in the Parts of Bodies: And since we cannot take downe the Lines of Liuing Creatures, (which some of the — say (If they could be taken downe,) would make vs Immortall;) the Next is for Subtilty of Operation, to take Bodies Putresied; Such as may be safely taken.

It hath beene obserued by the Ancients, that Much vse of Venus doth Dimme the Sight; And yet Eunuchs, which are vnable to generate, are (neuerthelesse) also Dimme Sighted. The Cause of Dimnesse of Sight, in the Former, is the Expence of Spirts; In the Latter, the Ouer-moisture of the Braine: For the Ouer-moisture of the Braine doth thicken the Spirits Visuall. and obstructeth their Passages; As we see by the Decay, in the Sight, in Age; Where also the Diminution of the Spirits concurreth as another Cause: we see also that Blindnesse commeth by Rheumes, and — . Now in — . there are all the Notes of Moisture; As the Swelling of their Thighes, the Loosenesse of their Belly, the Smoothnesse of their Skinne, &c.

The Pleasure in the Act of Venus is the greatest of the Pleasures of the Senses: The Matching of it with Itch is vnproper; though that also be Pleasing to the touch. But the Conses are Profound. First, all the Organe of the Senses qualifie the Nations of the Spirits; And make so many Seuerall Species of Motions, and Pleasures or Displeasures thereupon, as there be Dinersitics of Organs. The Instruments of Sight, Hearing, Taste, and Smell, are of seuerall frame; And so are the Parts for Generation. Therefore Sealiger doth well, to make the Pleasure of Generation a Sixth Sense; And if there were any other differing Organs, and Qualified Perfraction for the spirits to passe; there would

be more than the Fiue Senses; Neither doe we well know, whether some Beasts, and Birds, haue not Senses that we know not: And the very some of Dogs is almost a sense it selfe. Secondly, the Pleasures of the Touch, are greater and deeper, than those of the other Senses; As we see in Warming vpon Cold; Or Refrigeration vpon Heat: For as the Paines of the Touch, are greater than the Offences of other Sense; So likewise are the Pleasures. It is true, that the Affecting of the Spirits immediately, and (as it were) without an Organ, is of the greatest Pleasure; Which is but in two things: Sweet Smells; And Wine, and the like Sweet Vapours. For Smells, wee see their great and sudden Effect in fetching Men againe, when they swoune: For Drinke, it is certaine, that the Pleasure of Drunkennesse, is next the Pleasure of Venus: And Great Ioyes (likewise) make the Spirits moue, and touch themselues: And the pleasure of Venus is somewhat of the same Kinde.

It hath beene alwayes obserued, that Men are more inclined to Venus in the Winter, and Women in the Summer. The Cause is, for that the Spirits, in a Body more Hot and dry, (as the Spirits of Men are,) by the Summer are more exhaled, and dissipated; And in the Winter more condensed, and kept entire: But in Bodies that are Cold and Moist, (as Womens are,) the Summer doth Cherish the Spirits, and calleth them forth; the Winter doth dull them. Furthermore, the Abstinence or Intermission of the Vse of Venus, in Moist and Well Habituate Bodies, breedeth a Number of Diseases; And especially dangerous Impostumations. The Reason is euident; For that it is a Principall Euacuation, especially of the Spirits: For of the Spirits, there is scarce any Euacuation, but in Venus, and Exercise. And therefore the Omission of either of them, breedeth all Diseases of Repletion.

The Nature of Viuification is very worthy the Enquiry: And as the Nature of Things, is commonly better perceiued, in Small, than in Great, and in vnperfect, than in perfect, and in Parts, than in whole: So the Nature of Viuification is best enquired in Creatures bred of Putrefaction. The Contemplation whereof hath many Excellent Fruits. First, in Disclosing the Originall of of Viuification. Secondly, in Disclosing the Originall of Figuration. Thirdly, in Disclosing many

Things in the Nature of Perfect Creatures, which in them lye more hidden. And Fourthly, in Traducing, by way of Operation, some Obseruations in the Insecta, to worke Effects vpon Perfect Creatures. Note that the word Insecta, agreeth not with the Matter, but we euer vse it for Breuities sake, intending by it Creatures bred of Putrefaction.

The Insecta are found to breed out of seuerall Matters: Some breed of Mud, or Dung; As the Earth-wormes, Eeles, Snakes, &c. For they are both Putrefactions: For Water in Mud doth Puttifie, as not able to Preserue it selfe: And for Dung, all Excrements are the Refuse and Putrefactions of Nourishment. Some breed in Wood, both Growing, and Cut down. Quare in what Woods most, and at what Seasons? We see that the Worms with many Feet, which round themselues into Balls, are bred chiefly vnder Logs of Timber, but not in the Timber; And they are said to be found also, (many times,) in Gardens, where no Logs are. But it seemeth their Generation requireth a Couerture, both from Sunne, and Raine, or Dew; As the Timber is; And therfore they are not Venemous, but (contrariwise) are held by the Physitians to clarifie the Bloud. It is obserued also that Cimices are found in the Holes of Bed-Sides. Some breed in the Haire of Liuing Creatures; As Lice, and Tikes; which are bred by the Sweat close kept, and somewhat are fied by the Haire. The Excrements of Liuing Creatures, do not only breed Insecta, when they are Excerned, but also while they are in the Body; As in Wormes, whereto Children are most subiect, and are chiefly in the Guts. And it hath beene lately obserued by Physitians, that in many Pestilent Diseases, there are Wormes found in the vpper Parts of the Body, where Excrements are not, but onely Humours Putrified. Fleas breed Principally of Straw or Mass, where there hath beene a little Moisture; Or the Chamber and Bed-straw kept close, and not Aired. It is receiued that they are killed by Strewing Worme-wood in the Rooms. And it is truly obserued, that Bitter Things are apt, rather to kill, than engender Putrefaction; And they be Things, that are Fat, or Sweet, that are aptest to Putrifie. There is a Worme, that breedeth in Meale, of the shape of a large white Magget, which is giuen as a great Dainty to Nightingales. The Moath breedeth vpon Cloth, and other Lanifices; Especially if

they be laid vp dankish, and wet. It delighteth to be about the Flame of a Candle. There is a Worme called a Wenill, brad vnder Ground, and that feedeth vpon Roots; As Parsnips, Carrets, &c. Some breed in Waters, especially shaded, but they must be Standing-waters; As the Water-Spider, that hath six Legs. The Fly called the Oad-fly, breedeth of somewhat that Swimmeth vpon the Top of the Water, and is most about Ponds. There is a Worme that breedeth of the Dregs of Wine Decayed; which afterwards, (as is obserued by some of the Ancients,) turneth into a Gnat. It hath bin obserued by the Ancients, that there is a Worme that breedeth in old Snow, and is of Colour Reddish, and dull of Motion, and dieth soone after it commeth out of Snow. Which should shew, that Snow hath in it a secret Warmth; For else it could hardly Viuisie. And the Reason of the Dying of the Worme, may be the sudden Exhaling of that little Spirit, as soone as it commeth out of the Cold, which had shut it in. For as Butterflies quicken with Heat, which were benummed with Cold; So Spirits may exhale with Heat, which were Preserued in Cold. It is affirmed both by Ancient and Moderne Obseruation, that in Furnaces of Copper, and Brasse, where Chalcites, (which is Vitrioll,) is often cast in, to mend the working, there riseth suddenly a Fly, which sometimes moueth, as if it tooke hold on the walls of the Furnace; Sometimes is seene mouing in the Fire below; And dieth presently, as soone as it is out of the Furnace. Which is a Noble Instance, and worthy to be weighed; for it sheweth that as well Violent Heat of Fire, as the Gentle Heat of Liuing Creatures, will Viuifie, if it haue Matter Proportionable. Now the great Axiome of Viuification is, that there must be Heat to dilate the Spirit of the Body; An Actiue Spirit to be dilated; Matter Viscous or Tenacious, to hold in the Spirit; And that Matter to be put forth, and Figured. Now a Spirit dilated by so ardent a Fire, as that of the Furnace, as soone as euer it cooleth neuer so little, congealeth presently. And (no doubt) this Action is furthered by the Chalcites, which hath a Spirit, that will Put forth and germinate, as we see in Chymicall Trialls. Briefly, most Things Putrified bring forth Insecta of seuerall Names; But wee will not take vpon vs now, to Enumerate them all.

The Insecta haue beene noted by the Ancients, to feed little: But this hath not beene diligently obserued; For Grashoppers eat vp the Greene of whole Countries; And Silke-wormes deuoure Leaues swiftly; And Ants make gret Prouision. It is true, that Creatures, that Sleepe and rest much, Eat little; As Dormise, and Bats, &c. They are all without Bloud: Which may be, for that the Iuyce of their Bodies, is almost all one; Not Bloud, and Flesh, and Skin, and Bone, as in Perfect Creatures; The Integrall Parts haue Extreme Variety, but the Similar Parts little. It is true, that they haue, (some of them,) a Disphragme, and an Intestine; And they haue all Skins; Which in most of the Insecta are cast often. They are not (generally) of long Life: Yet Bees haue beene knowne to liue seuen yeares: And Snakes are thought, the rather for the Casting of their Spoils, to liue till they be Old: And Eeles, which many times breed of Putrefaction, will liue and grow very long: And those that Enterchange from Wormes to Flyes in the Summer, and from Flyes to Wormes in the Winter, haue beene kept in Boxes oure kyears at the least. Yet there are certain Flyes, that are called Ephemera, that liue but a day. The Cause is, the Exility of the Spirit; Or perhaps the Absence of the Sunne; For that if they were brought in, or kept close, they might liue longer. Many of the Insecta, (as Butterflies, and other Flies,) reuiue easily, when they seeme dead, being brought to the Sunne, or Fire, The Cause whereof is, the Diffusion of the Vitall Spirit, and the Easie Dilating of it by a little Heat. They stirre a good while, after their Heads are off, or that they be cut in Pecces; Which is caused also, for that their Vitall Spirits are more diffused thorow-out all their Parts, and lesse confined to Organs, than in Perfect Creatures.

The Insecta haue Voluntary Motion, and therefore Imagination; And whereas some of the Ancients haue said, that their Motion is Indeterminate, and their Imagination Indefinite, it is negligently obserued; For Arts goe right forwards to their Hills; And Bees doe (admirably) know the way, from a Flowry Heath, two or three Miles off, to their Hiues. It may be, Gnats, and Flyes, haue their Imagination more mutable, and giddy, as Small Birds likewise haue. It is said by some of the Ancients, that they haue onely the Sense of Feeling; which is manifestly vntrue: For if they goe forthright to a Place, they must needs haue

Sight: Besides they delight more in one Flower, or Herbe, than in another, and therefore haue Taste: And Bees are called with Sound vpon Brasse, and therefore they haue Hearing: Which sheweth likewise that though their Spirit be diffused, yet there is a Seat of their Senses in their Head.

Other Obseruations concerning the Insecta, together with the Enumeration of them, wee referre to that place, where wee meane to handle the Title of Animal's in generall.

A Man Leapeth better with Weights, in his Hands, than without. The Cause is, for that the Weight, (if it be proportionable,) strengthneth the Sinneues, by Contracting them. For otherwise, where no Contraction is needfull, Weight hindereth. As wee see in Horse-Races, Men are curious to fore-see, that there be not the least Weight, vpon the one Horse, more than vpon the other. In Leaping with Weights, the Armes are first cast backwards, and then forwards, with so much the greater Force: For the Hands goe backward before they take their Raise. Quaere, if the contrary Motion of the Spirits, immediately before the Motion wee intend, doth not cause the Spirits, as it were, to breake forth with more Force: As Breath also drawne, and kept in, commeth forth more forcibly: And in Casting of any Thing, the Armes, to make a greater Swing, are first cast backward.

Of Musicall Tones, and Vnequall Sounds, wee haue spoken before; But touching the Pleasure, and Displeasure of the Senses, not so fully.Harsh Sounds, as of a Sawe, when it is sharpened; Grinding of one Stone against another; Squeaking, or Skriching Noise; make a Shiuering or Horrour in the Body, and set the Teeth on edge. The Cause is, for that the Obiects of the Eare, doe affect the Spirits (immediately) most with Pleasure and Offence. We see, there is no Colour that affecteth the Eye much with Displeasure: There be Sights, that are Horrible, because they excite the Memory of Things that are Odious, or Fearefull; But the same Things Painted doe little affect. As for Smells, Tastes, and Touches, they be Things that doe affect, by a Participation, or Impulsion of the Body, of the Obiect. So it is Sound alone, that doth immediately, and incorporeally, affect most: This is most manifest in Musicke; and Concords and

Discords in Musicke: For all Sounds, whether they be sharpe, or Flat, if they be Sweet, haue a Roundnesse and Equality; And if they be Harsh, are Vnequall: For a Discord it selfe is but a Harshnesse of Diners Sounds Meeting. It is true, that Inequality, not Stayed vpon, but Passing, is rather an Encrease of Sweetnesse: As in the Purling of a Wreathed String; And in the Rancity of a Trumpet; And in the Nightinghale-Pipe of a Regall; And in a Discord straight falling vpon a Concord: But if you stay vpon it, it is Offensiue; And therefore, there bee these three Degrees of Pleasing, and Displeasing in Sounds; Sweet Sounds; Discords and Harsh Sounds, which we call by diuers Names, as Skriching, or Grating, such as wee now speake of. As for the Setting of the Teeth on Edge, we see plainly, what an Intercourse there is, betweene the Teeth, and the Organ of the Hearing, by the Taking of the End of a Bow, betweene the Teeth, and Striking vpon the String.

VIII. Century.

THere be Mineralls, and Fossiles, in great Varietie; But of Veines of Earth Medicinall, but few; The Chiefe are, Terra Lemnia, Terra Sigillata communis, and Bolus Arminus: Whereof Terra Lemnia is the Chiefe. The Vertues of them are, for Curing of Wounds, Stanching of Bloud, Stopping of Flaxes and Rheumes, and Arresting the Spreading of Poison, Infection, and Putrefaction: And they haue, of all other Simples, the Perfectest and Purest Qualitie of Drying, with little or no Mixture of any other Qualitie. Yet it is true, that the Bole-Arminicke is the most Cold of them; And that Terra Lemnia is the most Hot; For which Cause, the Island Lemnos, where it is digged, was in the Old Fabulous Ages consecrated to Vulcan.

About the Bottome of the Straights are gathered great Quantities of Sponges, which are gathered from the sides of Rocks, being as it were a large, but tough, Mosse. It is the more to be noted, because that there be but few Substances, Plant-like, that grow deepe within the Sea; For they are gathered sometimes fifteene Fathome deepe; And when they are laid on Shoare, they seeme to be of great Bulke; But crushed together, will be transported in a very small Roome.

It seemeth, that Fish, that are vsed to the Salt-Water, doe neuerthelesse delight more in Fresh. Wee see, that Salmons, and Smelts, loue to get into Riuers, though it be against the Streame. At the Hauen of Constantinople, you shall haue great Quantities of Fish that come from the Euxine-Sea; that when they come into the Fresh Water, doe inebriate and turne vp their Bellies; So as you may take them with your Hand. I doubt, there hath not beene sufficient Experiment made of Putting Sea-Fish into Fresh Water, Ponds, and Pooles. It is a Thing of great Vse, and Pleasure: For so you may haue them new at some good distance from the Sea: And besides, it may be, the Fish will eat the pleasanter, and may fall to breed: And it is said that Colchester Oysters, which are put into Pits, where the Sea goeth and commeth, (but yet so, that there is a Fresh Water

Comming also to them, when the Sea voideth,) become by that meanes Fatter, and more Growne.

The Turkish-Bow giueth a very Forcible Shoot; Insomuch as it hath beene knowne, that the Arrow hath pierced a Stecle Target, or a Peece of Brasse of two Inches thicke: But that which is more strange, the Arrow, if it be Headed with Wood, hath beene knowne to pierce thorow a Peece of Wood, of eight Inches thicke. And it is certaine, that wee had in vse at one time, for Sea-Fight, short Arrowes, which they called Sprights, without any other Heads, saue Wood sharpned; which were discharged out of Muskets, and would pierce thorow the Sides of Ships, where a Bullet would not pierce. But this dependeth vpon one of the greatest Secrets in all Nature; Which is, that Similitude of Substance will cause Attraction, where the Body is wholly freed from the Motion of Grauitie: For if that were taken away, Lead would draw Lead, and Gold would draw Gold, and Iron would draw Iron, without the helpe of the Load-Stone. But this same Motion of Weight or Grauitie, (which is a meere Motion of the Matter, and hath no Affinitie with the Forme, or Kinde,) doth kill the other Motion, except it selfe be killed by a violent Motion; As in these Instances of Arrowes; For then the Motion of Attraction by Similitude of Substance, beginneth to shew it selfe. But wee shall handle this Point of Nature fully in due Place.

They haue in Turkey, and the East, certaine Confections, which they call Seruetts, which are like to Candied Conserues; And are made of Sugar and Limons, or Sugar and Citrons, or Sugar and Violets, and some other Flowers; And some Mixture of Amber for the more delicate Persons; And those they dissolue in Water, and thereof make their Drinke because they are forbidden Wine by their Law. But I doe much maruell that no Englishman, or Dutehman, or German, doth set vp Brewing in Constantinople; Considering they haue such Quantitie of Barley. For as so the generall Sort of Men, Frugalitie may be the Cause of Drinking Water; For that it is no small Sauing, to pay nothing for ones Drinke: But the better Sort mought well be at the Cost. And yet I wonder the lesse at it, because I see France, Italie, or Spaine, haue not taken into vse, Beere, or Ale; Which (perhaps) if they did, would better both their Healths, and their

Complexions. It is likely it would be Matter of great Gaine to any, that should begin it in Turkey.

In Bathing in Hot Water, Sweat (neuerthelesse) commeth not in the Parts vnder the Water. The Cause is; First, for that Sweat is a Kinde of Colliquation. And that Kinde of Colliquation is not made, either by an Ouer-Drie Heat, or an Ouer-Moist Heat. For Ouer-Moisture doth somewhat extinguish the Heat; As wee see that euen Hot Water quencheth Fire: And Ouer-Drie Heat shutteth the Pores: And therefore Men will sooner Sweat couered before the Sunne, or Fire, than if they stood Naked; And Earthen Bottles, filled with Hot Water, doe prouoke, in Bed, a Sweat more daintily, than Bricke-bats Hot. Secondly, Hot Water doth cause Euaporation from the Skin; So as it spendeth the Matter, in those Parts vnder the Water, before it issueth in Sweat. Againe, Sweat commeth more plentifully, if the Heat be increased by Degrees, than if it be greatest at first, or equall. The Cause is, for that the Pores are better opened by a Gentle Heat, than by a more Violent; And by their opening the Sweat issueth more abundantly. And therefore Physitians may doe well, when they prouoke Sweat in Bed, by Bottles, with a Decoction of Sudorisicke Herbs in Hot Water, to make two Degrees of Heat in the Bottles; And to lay in the Bed, the lesse Heated first, and after halfe an Houre the more Heated.

Sweat is Salt in Taste; The Cause is, for that, that Part of the Nourishment, which is Fresh and Sweet, turneth into Bloud, and Flesh; And the Sweat is only that Part which is Separate, and Excerned. Bloud also Raw hath some Saltnesse, more than Flesh; because the Assimilation into Flesh, is not without a little and subtile Excretion from the Bloud.

Sweat commeth forth more out of the Vpper Parts of the Body, than the Lower; The Reason is, because those Parts are more replenished with Spirits; And the Spirits are they that put forth Sweat: Besides, they are lesse Fleshy, and Sweat issueth (chiefly) out of the Parts that are lesse Fleshy, and more Dry; As the Forehead, and Breast.

Men Sweat more in Sleepe, than Waking; And yet Sleepe doth rather stay other Fluxions, than cause them; As Rheumes, Loosenesse of the Body, &c. The

Cause is, for that in Sleepe, the Heat and Spirits doe naturally moue inwards, and there rest. But when they are collected once within, the Heat becommeth more Violent, and Irritate; And thereby expelleth Sweat.

Cold Sweats are (many times) Mortall, and neere Death; And alwayes ill, and Suspected; As in Great Feares, Hypochondricall Passions, &c. The Cause is, for that Cold Sweats come by a Relaxation or Forsaking of the Spirits, wherby the Moisture of the Body, which Heat did keepe firme in the Parts, seuereth, and issueth out.

In those Diseases, which cannot be discharged by Sweat, Sweat is ill, and rather to be stayed; As in Diseases of the Lungs, and Fluxes of the Belly; But in those Diseases, which are expelled by Sweat, it easeth and lightneth; As in Agues, Pestilences, &c. The Cause is, for that Sweat in the Latter Sort is partly Criticall, and sendeth forth the Matter that offendeth; But in the Former, it either proceedeth from the Labour of the Spirits, which sheweth them Oppressed; Or from Motion of Consent, when Nature not able to expell the Disease, where it is seated, moueth to an Expulsion indifferent ouer all the Body.

The Nature of the Glo-wormexs is hitherto not well obserued. Thus much we see; That they breed chiefly in the Hottest Moneths of Summer; And that they breed not in Champaigne, but in Bushes, and Hedges. Wherby it may be conceiued, that the Spirit of them is very fine, and not to be refined, but by Summer Heats: And againe, that by reason of the Finenesse, it doth easily exhale. In Italy, and the Hotter Countries, there is a Fly they call Lucciole, that shineth as the Glo-worme doth; And it may be is the Flying Glo-worme. But that Fly is chiefly vpon Fens, and Marrishes. But yet the two former Obseruations hold; For they are not seene, but in the Heat of Summer; And Sedge, or other Greene of the Fens, giue as good Shade, as Bushes. It may be the Glo-wormes of the Cold Countries ripen not so farre as to be Winged.

The Passions of the Minde, worke vpon the Body the Impressions following.Feare causeth Palenesse; Trembling; The Standing of the Haire vpright; Starting; and Skritching. The Palenesse is caused, for that the Bloud runneth inward, to succour the Heart. The Trembling is caused, for that through

the Flight of the Spirits inward, the Outward Parts are destituted, and not sustained. Standing Vpright of the Haire is caused, for that by the Shutting of the Pores of the Skin, the Haire that lyeth asloape, must needs Rise, Starting is both an Apprehension of the Thing feared, (And, in that kinde, it is a Motion of Shrincking;) And likewise an Inquisition, in the beginning, what the Matter should be; (And in that kinde it is a Motion of Erection;) And therefore, when a Man would listen suddenly to any Thing, he Starteth; For the Starting is an Erection of the Spirits to attend. Skritching is an Appetite of Expelling that which suddenly striketh the Spirits: For it must be noted, that many Motions, though they be vnprofitable to expell that which hurteth, yet they are Offers of Nature, and cause Motions by Consent; As in Groaning, or Crying vpon Paine.

Griefe and Paine cause Sighing; Sobbing; Groaning; Screaming; and Roaring; Teares; Distorting of the Face; Grinding of the Teeth; Sweating. Sighing is caused by the Drawing in of a greater Quantity of Breath to refresh the Heart that laboureth: like a great Draught when one is thirsty. Sobbing is the same Thing stronger. Groaning, and Screaming, and Roaring, are caused by an Appetite of Expulsion, as hath beene said: For when the Spirits cannot expell the Thing that hurteth, in their Strife to do it, by Motion of Consent, they expell the Voice. And this is, when the Spirits yeeld, and giue ouer to resist; For if one doe constantly resist Paine, he will not groane. Teares are caused by a Contraction of the Spirits of the Braine; Which Contraction by consequence astringeth the Moisture of the Braine, and thereby sendeth Teares into the Eyes. And this Contraction, or Compression causeth also Wringing of the Hands; For Wringing is a Gesture of Expression of Moisture. The Distorting of the Face is caused by a Contention, first to beare and resist, and then to expell; Which maketh the Parts knit first, and afterwards open. Grinding of the Teeth is caused (likewise) by a Gathering and Serring of the Spirits together to resist; Which maketh the Teeth also to set hard one against another. Sweating is also a Compound Motion by the Labour of the Spirits, first to resist, and then to expell.

Ioy causeth a Chearefulnesse, and Vigour in the Eyes; Singing; Leaping; Dancing; And sometimes Teares. All these are the Effects of the Dilatation, and

Comming forth of the Spirits into the Outward Parts; Which maketh them more Linely, and Stirring. We know it hath beene seene, that Excessiue Sudden Ioy, hath caused Present Death, while the Spirits did spread so much, as they could not retire againe. As for Teares, they are the Effects of Compression of the Moisture of the Braine. vpon Dilatation of the Spirits. For Compression of the Spirits worketh an Expression of the Moisture of the Braine, by Consent, as hath beene said in Griefe. But then in Ioy, it worketh it diuersly; *viz.* by Prepulsion of the Moisture, when the Spirits dilate, and occupy more Roome.

Anger causeth Palenesse in some, and the Going and Comming of the Colour in Others: Also Trembling in some, Swelling; Foaming at the Month; Stamping; Bending of the Fist. Palenesse, and Going, and Comming of the Colour, are caused by the Burning of the Spirits about the Heart; Which to refresh themselues call in more Spirits from the Outward Parts. And if the Palenesse be alone, without Sending forth the Colour againe, it is commonly ioyned with some Feare; But in many there is no Palenesse at all, but contrariwise Rednesse about the Cheekes, and Gills; Which is by the Sending forsh of the Spirits in an Appetite to Reuenge. Trembling in Anger is likewise by a Calling in of the Spirits; And is commonly, when Anger is ioyned with Feare. Swelling is caused, both by a Dilatation of the Spirits by Ouer-Heating, and by a Liquefaction or Boyling of the Humours thereupon. Foaming at the Mouth is from the same Cause, being an Ebullition. Stamping. and Bending of the Fist, are caused by an Imagination of the Act of Reuenge.

Light Displeasure or Dislike, causeth Shaking of the Head; Frowning, and Knitting of the B — es. These Effects arise from the same Causes that Trembling, and Horrour doe; Namely, from the Retiring of the Spirits. but in a lesse degree. For the Shaking of the Head is but a Slow and Definite Trembling; And is a Gesture of Slight Refusall: And we see also, that a Dislike causeth (often) that Gesture of the Hand, which wee vse, when we refuse a Thing, or warne it away. The Frowning, and Knitting of the Browes, is a Gathering, or Serring of the Spirits, to resist in some Measure. And we see also, this Knitting

of the Browes will follow vpon earnest Studying, or Cogitation of any Thing, though it bee without Dislike.

Shame causeth Blushing; And Casting downe of the Eyes. Blushing is the Resort of Bloud to the Face; Which in the Passion of Shame is the Part that laboureth most. And although the Blushing will be seene in the whole Breast, if it be Naked, yet that is but in Passage to the Face. As for the Casting downe of the Eyes, it proceedeth of the Reuerence a Man beareth to other Men; Whereby, when he is ashamed, he cannot endure to looke firmely vpon Others: And we see that Blushing, and the Casting downe of the Eyes both, are more when we come before Many; Ore Pompeij quid mollius? Nunquàm non coram pluribus erubuit: And likewise when we come before Great, or Reuerend Persons.

Pity causeth sometimes Teares; And a Flexion or Cast of the Eye aside. Teares come from the same Cause that they doe in Griefe: for Pity is but Griefe in Anothers Behalfe. The Cast of the Eye is a Gesture of Auersion, or Loathnesse to behold the Obiect of Pity.

Wonder causeth Astonishment, or an Immoueable Posture of the Body; Casting vp of the Eyes to Heauen; And Lifting vp of the Hands. For Astonishment, it is caused by the Fixing of the Minde vpon one Obiect of Cogitation, whereby it doth not spatiate and transcurre, as it vseth: For in Wonder the Spirits fly not, as in Feare; But onely settle, and are made lesse apt to moue. As for the Casting vp of the Eyes, and Lifting vp of the Hands, it is a Kinde of Appeale to the Deity; Which is the Authour, by Power, and Prouidence, of Strange Wonders.

Laughing causeth a Dilatation of the Mouth, and Lips; A Continued Expulsion of the Breath, with the loud Noise, which maketh the Interiection of Laughing; Shaking of the Breast, and Sides; Running of the Eyes with Water, if it be Violent, and Continued. Wherein first it is to be vnderstood, that Laughing is scarce (properly) a Passion, but hath his Source from the Intellect; For in Laughing there euer precedeth a Conceit of somewhat Ridiculous, And therefore it is Proper to Man. Secondly, that the Cause of Laughing is but a Light Touch of the Spirits, and not so deepe an Impression as in other Passions. And therefore,

(that which hath no Affinity with the Passions of the Minde) it is moued, and that in great vehemency, onely by Tickling some Parts of the Body: And we see that Men euen in a Grieued State of Minde, yet cannot sometimes forbeare Laughing. Thirdly, it is euer ioyned with some Degree of Delight: And therefore Exhilaration hath some Affinity with Ioy, though it be a much Lighter Motion: Res seneraest verum Gandium. Fourthly, that the Obiect of it is Deformity, Absurdity, Shrew'd Turnes, and the like. Now to speake of the Causes of the Effects before mentioned, whereunto these Generall Notes giue some Light, For the Dilatation of the Mouth and Lips, Continued Expulsion of the Breath and Voice, and Shaking of the Breast and Sides, they proceed (all) from the Dilatation of the Spirits; Especially being Sudden. So likewise, the Running of the Eyes with Water, (as hath beene formerly touched, where we spake of the Teares of Ioy and Griefe,) is an Effect of Dilatation of the Spirits. And for Suddennesse, it is a great Part of the Matter: For we see, that any Shrew'd Turne that lighteth vpon Another; Or any Deformity, &c. moueth Laughter in the Instant; Which after a little time it doth not. So we cannot Laugh at any Thing after it is Stale, but whilest it is New: And euen in Tickling, if you Tickle the Sides, and giue warning; Or giue a Hard or Continued Touch, it doth not moue Laughter so much.

Lust causeth a Flagrancy in the Eyes; and Priapisme. The Cause of both these is, for that in Lust, the Sight, and the Touch, are the Things desired: And therefore the Spirits resort to those part-, whch are most affected. And note well in generall, (For that great Vse may be made of the Obseruation,) that (euermore) the Spirits, in all Passions, resort most to the Parts, that labour most, or are most affected. As in the last, which hath been mentioned, they resort to the Eyes, and Venereous Parts: In Feare, and Anger, to the Heart: In Shame to the Face: And in Light Dislikes to the Head.

It hath beene obserued by the Ancients and is yet beleeued, that the Sperme of Drunken Men is Vnfruitfull. The Cause is, for that it is Ouer-moistened, and wanteth Spissitude. And we haue a merry Saying, that they that goe Drunke to Bed, get Daughters.

Drunken Men are taken with a plaine Defect, or Destitution in Voluntary Motion. They — ele: They tremble: They cannot stand, nor speake strongly. The —— is, for that the Spirits of the Wine, oppresse the Spirits Animall, and — pate Part of the Place, where they are; And so make them Weake to moue. And therefore Drunken Men are apt to fall asleepe: And Opiates, and Stupefactines, (as Poppy, Henbane, Hemlocke, &c.) induce a kinde of Drunkennesse, by the Grossenesse of their Vapour; As Wine doth by the Quantity of the Vapour. Besides, they rob the Spirits Animall of their Matter, whereby they are nourished: For the Spirits of the Wine prey vpon it, as well as they: And so they make the Spirits lesse Supple, and Apt to moue.

Drunken Men imagine euery Thing turneth round; They imagine also that Things Come vpon them; They See not well Things a farre off; Those Things that they See neare hand, they See out of their Place; And (sometimes) they see Things double. The Cause of the Imagination that Things turne Round, is, for that the Spirits themselues turne, being compressed by the Vapour of the Wine: (For any Liquid Body vpon Compression, turneth, as we see in Water:) And it is all one to the Sight, whether the Visuall Spirits moue, or the Obiect moueth, or the Medium moueth. And we see that long Turning Round breedeth the same Imagination. The Cause of the Imagination that Things come vpon them, is, for that the Spirits Visuall themselues draw backe; which maketh the Obiect seeme to come on; And besides, when they see Things turne Round, and Moue, Feare maketh them thinke they come vpon them. The Cause that they cannot see Things a farre off, is the Weaknesse of the Spirits; for in euery Megrim, or Vertige, there is an Obtenebration ioyned with a Semblance of Turning round; Which we see also in the lighter Sort of Swonnings. The Cause of Seeing things out of their Place, is the Refraction: of the Spirits Visuall; For the Vapour is as an Vnequall Medium; And it is, as the Sight of Things, out of place, in Water. The Cause of Seeing Things double, is, the Swift and Vnquiet Motion of the Spirits, (being Oppressed,) to and fro; For, (as was said before,) the Motion of the Spirits Visuall, and the Motion of the Obiect, make the same Appearances;

And for the Swift Motion of the Obiect, we see, that if you fillip a Lute-String, it sheweth double, or Treble.

Men are sooner Drunke with Small Draughts, than with Great. And againe, Wine Sugred inebriateth lesse, than Wine Pure. The Cause of the Former is, for that the Wine descendeth not so fast to the Bottome of the Stomach; But maketh longer Stay in the Vpper Part of the Stomach, and sendeth Vapours faster to the Head; And therefore inebriateth sooner. And, for the same Reason, Sops in Wine, (Quantity for Quantity,) inebriate more, than Wine of it selfe. The Cause of the Latter is, for that the Sugar doth inspissate the Spirits of the Wine, and maketh them not so easie to resolue into Vapour. Nay further, it is thought, to be some Remedy against Inebriating, if Wine Sugred be taken after Wine Pure. And the same Effect is wrought either by Oyle, or Milke, taken vpon much Drinking.

The Vse of Wine, in Dry, and Consumed Bodies, is hurtfull; In Moist, and Full Bodies, it is good. The Cause is, for that the Spirits of the Wine doe prey vpon the Dew, or Radicall Moisture, (as they terme it,) of the Body, and so deceiue the Animall Spirits. But where there is Moisture Enough, or Superfluous, there Wine helpeth to disgest, and desiccate the Moisture.

The Catterpiller is one of the most Generall of Wormes, and breedeth of Dew, and Leaues: For we see infinite Number of Catterpillers, which breed vpon Trees, and Hedges; By which the Leaues of the Trees, or Hedges, are in great Part consumed; As well by their Breeding out of the Leafe, as by their Feeding vpon the Leafe. They breed in the Spring chiefly, because then there is both Dew, and Leafe. And they breed commonly when the East Winds haue much blowne: The Cause whereof is, the Drinesse of that Wind: For to all Viuification vpon Putrefaction, it is requisite the Matter be not too Moist: And therefore we see, they haue Copwebs about them, which is a signe of a Slimy Drinesse: As we see vpon the Ground, whereupon, by Dew, and Sunne, Copwebs breed all ouer. We see also the Greene Catterpiller breedeth in the Inward Parts of Roses, especially not blowne, where the Dew sticketh: But especially Catterpillers, both the greatest, and the most, breed vpon Cabbages, which haue a Fat Leafe, and apt to Putrifie. The Catterpiller towards the End of Summer waxeth Volatile, and

turneth to a Butterfly, or perhaps some other Fly. There is a Catterpiller, that hath a Furre, or Downe vpon him, and seemeth to haue Affinity with the Silke-worme

The Flyes Cantharides are bred of a Worme, or Catterpiller, but peculiar to certaine Fruit-Trees; As are the Fig-tree, the Pine-tree, and the Wilde Briar; All which beare Sweet Fruit; And Fruit that hath a kinde of secret Biting, or Sharpnesse: For the Fig hath a Milke in it, that is Sweet, and Corrosiue: The Pine-Apple hath a Kernell that is Strong and Absterside: The Fruit of the Briar is said to make Children, or those that Eat them, Scabbed. And therefore, no maruell though Cantharides haue such a Corrosiue, and Cauterizing Quality; For there is not any other of the Insecta, but is bred of a Duller Matter. The Body of the Cantharides is bright coloured; And it may be, that the delicate-coloured Dragon-Flies, may haue likewise some Corrosiue Quality.

Lassitude is remedied by Bathing, or Annointing with Oyle, and Warme water. The Cause is, for that all Lassitude is a kinde of Contusion, and Compression of the Parts; And Bathing, and Annointing giue a Relaxation, or Emollition: And the Mixture of Oyle, and Water, is better than either of them alone; Because Water Entreth better into the Pores, and Oyle after Entry softneth better. It is found also, that the Taking of Tobacco doth helpe and discharge Lassitude. The Reason whereof is, partly, because by Chearing or Comforting of the Spirits it openeth the Parts Compressed, or Contused: And chiefly, because it refresheth the Spirits by the Opiate Vertue thereof; And so dischargeth Wearinesse; as Sleepe likewise doth.

In Going vp a Hill, the Knees will be most Weary; In Going downe a Hill, the Thighes. The Cause is, for that, in the Lift of the Feet, when a Man Goeth vp the Hill, the Weight of the Body beareth most vpon the Knees; And in Going downe the Hill, vpon the Thighes.

The Casting of the Skin, is by the Ancients compared, to the Breaking of the Secundine, or Call; but not rightly: For that were to make euery Casting of the Skin a New Birth: And besides, the Secundine is but a generall Couer, not shaped according to the Parts; But the Skin is shaped according to the Parts. The

Creatures, that cast their Skin, are; The Snake, the Viper, the Grashopper, the Lizard, the Silke worme, &c. Those that cast their Shell, are; The Lobster, the Crab, the Crafish, the Hodmandod or Dedman, the Tortoise, &c. The Old Skins are found, but the Old Shells neuer: So as it is like, they scale off, and crumble away by degrees. And they are knowne, by the Extreme Tendernesse and Softnesse of the New Shell; And somewhat by the Freshnesse of the Colour of it. The Cause of the Casting of Skin, and Shell, should seeme to be the great Quantity of Matter in those Creatures, that is fit to make Skin, or Shell; And againe, the Loosenesse of the Skin, or Shell, that sticketh not close to the Flesh. For it is certaine, that it is the New Skin, or Shell, that putteth off the Old: So we see, that in Deere, it is the Young Horne, that putteth off the Old; And in Birds, the Young Feathers put off the Old: And so Birds, that haue much Matter for their Beake, cast their Beakes; the New Beake Putting off the Old.

Lying, not Erect, but Hollow, which is in the Making of the Bed; Or with the Legges gathered vp, which is in the Posture of the Body, is the more Wholesome. The Reason is, the better Comforting of the Stomach, which is by that lesse Pensile: And we see, that in Weake Stomachs, the Laying vp of the Legs high, and the Knees almost to the Mouth, helpeth, and comforteth. We see also that Gally-Slanes, notwithstanding their Misery otherwise, are commonly Fat and Fleshy; And the Reason is, because the Stomach is supported somewhat in Sitting; And is Pensile in Standing, or Going. And therefore, for Prolongation of Life, it is good to choose those Exercises, where the Limbes moue more than the Stomach, and Belly; As in Rowing, and in Sawing being Set.

Megrims and Giddinesse are rather when we Rise, after long Sitting, than while we Sit. The Cause is, for that the Vapours, which were gathered by Sitting, by the Sudden Motion, fly more vp into the Head.

Leaning long vpon any Part maketh it Numme, and, as wee call it, Asleepe. The Cause is, for that the Compression of the Part suffereth not the Spirits to haue free Accesse; And therefore, when wee come out of it, wee feele a Stinging or —— ing; Which is the Re-entrance of the Spirits.

It hath beene noted, that those Yeares are Pestilentiall, and Vnwholesome, when there are great Numbers of Frogs, Flies, Locusts, &c. The Cause is plaine; For that those Creatures being engendred of Putrefaction, when they abound, shew a generall Disposition of the Yeare, and Constitution of the Aire, to Diseases of Putrefaction. And the same Prognesticke, (as hath beene said before,) holdeth, if you finde Wormes in OakeApples. For the Constitution of the Aire, appeareth more subtilly, in any of these Things, than to the Sense of Man.

It is an Obseruation amongst Country-People, that Yeares of Store of Hawes and Heps, doe commonly portend Cold Winters; And they ascribe it to Gods Prouidence, that, (as the Scripture saith) reacheth euen to the Falling of a Sparrow; And much more is like to reach to the Preseruation of Birds in such Seasons. The Naturall Cause also may be the Want of Heat, and Abundance of Moisture, in the Summer precedent; Which putteth forth those Fruits, and must needs leaue great Quantity of Cold Vapours, not dissipate; Which causeth the Cold of the Winter following.

They haue in Turkey, a Drinke called Coffa, made of a Berry of the same Name, as Blacke as Soot, and of a Strong Sent, but not Aromaticall; Which they take, beaten into Powder, in Water, as Hot as they can drinke it: And they take it, and sit at it, in their Coffa-Houses, which are like our Tauernes. This Drinke comforteth the Braine, and Heart, and helpeth Disgestion. Certainly this Berry Coffa; The Root, and Leafe Betel; The Leafe Tobacco; And the Teare of Poppy, (Opium,) of which the Turks are great Takers, (supposing it expelleth all Feare;) doe all Condense the Spirits, and make them Strong, and Aleger. But it seemeth they are taken after seuerall manners; For Coffa and Opium are taken downe; Tobacco but in Smoake; And Betel is but champed in the Mouth, with a little Lime. It is like there are more of them, if they were well found out, and well corrected. Quare of Henbane-Seed; Of Mandrake; Of Saffron, Root, and Flower; Of Folium Indum; Of Amber-grice; Of the Assyrian Amomum, if it may be had; And of the Scarlet Powder, which they call Kermez; And (generally) of all such

Things, as doe inebriate, and prouoke Sleepe. Note that Tobacco is not taken in Root, or Seed, which are more forcible euer than Leaues.

The Turkes haue a Blacke Powder, made of a Minerall called Alcohole; Which with a fine long Pencill they lay vnder their Eye-lids; Which doth colour them Blacke; Whereby the White of the Eye is set off more white. With the same Powder they colour also the Haires of their Eye-lids, and of their Eye-browes, which they draw into Embowed Arches. You shall finde that Xenophon maketh Mention, that the Medes vsed to paint their Eyes. The Turkes vse with the same Tincture, to colour the Haire of their Heads and Beards Blacke: And diuers with vs, that are growne Gray, and yet would appeare Young, finde meanes to make their Haire blacke, by Combing it, (as they say,) with a Leaden Combe, or the like. As for the Chineses, who are of an ill Complexion, (being Oliuaster,) they paint their Cheekes Scarlet; Especially their King, and Grandes. Generally, Barbarous People, that goe Naked, doe not onely paint Themselues, but they pownce and raze their Skinne, that the Painting may not be taken forth; And make it into Works. So doe the West Indians; And so did the Ancient Picts, and Brittons; So that it seemeth, Men would haue the Colours of Birds Feathers, if they could tell how; Or at least, they will haue Gay Skins, instead of Gay Cloathes.

It is strange, that the Vse of Bathing, as a Part of Diet, is left. With the Romans, and Grecians, it was as vsuall, as Eating, or Sleeping: And so is it amongst the Turkes at this day: Whereas with vs it remaineth but as a Part of Physicke. I am of Opinion, that the Vse of it, as it was with the Romans, was hurtfull to Health; For that it made the Body Soft, and easie to Waste. For the Turkes it is more proper, because that their Drinking Water, and Feeding vpon Rize, and other Food of small Nourishment, maketh their Bodies so Solide, and Hard, as you need not feare that Bathing should make them Froathie. Besides, the Turkes are great Sitters, and seldome walke; Whereby they Sweat lesse, and need Bathing more. But yet certaine it is, that Bathing, and especially Annointing, may be so vsed, as it may be a great Helpe to Health, and

Prolongation of Life. But hereof we shall speake in due Place, when we come to handle Experiments Medicinall.

The Turkes haue a Pretty Art of Chamoletting of Paper, which is not with vs in vse. They take diuers Oyled Colours, and put them seuerally (in drops) vpon Water; And stirre the Water lightly; And then wet their Paper, (being of some Thicknesse,) with it; And the Paper will be Waued, and Veined, like Chamolet, or Marble.

It is somewhat strange, that the Bloud of all Birds, and Beasts, and Fishes, should be of a Red Colour, and only the Bloud of the Cuttle should be as Blacke as Inke. A Man would thinke, that the Cause should be the High Concoction of that Bloud; For wee see in ordinary Puddings, that the Boyling turneth the Bloud to be Blacke; And the Cuttle is accounted a delicate Meat, and is much in Request.

It is reported of Credit, that if you take Earth, from Land adioyning to the Riuer of Nile; And preserue it in that manner, that it neither come to be Wet, nor Wasted; And Weigh it daily, it will not alter Weight vntill the seuenteenth of Iune, which is the Day when the Riuer beginneth to rise; And then it will grow more and more Ponderous, till the Riuer commeth to his Heighth Which if it be true, it cannot be caused, but by the Aire, which then beginneth to Condense; And so turneth within that Small Mould into a degree of Moisture; Which produceth Weight. So it hath beene obserued, that Tobacco, Cut, and Weighed, and then Dried by the Fire, loseth Weight; And after being laid in the open Aire, recouereth Weight againe. And it should seeme, that as soone as euer the Riuer beginneth to increase, the whole Body of the Aire thereabouts suffereth a Change: For (that which is more strange,) it is credibly affirmed, that vpon that very Day, when the Riuer first riseth, great Plagues, in Caire, vse suddenly to breake vp.

Those that are very Cold, and especially in their Feet, cannot get to Sleepe. The Cause may be, for that in Sleepe is required a Free Respiration, which Cold doth shut in, and hinder: For wee see, that in great Colds, one can scarce draw his Breath. Another Cause may be, for that Cold calleth the Spirits to succour;

And therefore they cannot so well close; and goe together in the Head; Which is euer requisite to Sleepe. And for the same Cause, Paine, and Noise hinder Sleepe; And Darknesse (contrariwise) furthereth Sleepe.

Some Noises (whereof wee spake in the 112. Experiment) helpe Sleepe; As the Blowing of the Wind, the Trickling of Water, Humming of Bees, Soft Singing, Reading, &c. The Cause is, for that they moue in the Spirits a gentle Attention; And whatsoeuer moueth Attention, without too much Labour, stilleth the Naturall and discursiue Motion of the Spirits.

Sleepe nourisheth, or at least preserueth Bodies, a long time, without other Nourishment. Beasts that sleepe in Winter, (as it is noted of Wilde Beares,) during their Sleep wax very Fat, though they Eat nothing. Bats haue beene found in Ouens, and other Hollow Close Places, Matted one vpon another; And therefore it is likely that they Sleepe in the Winter time, and eat Nothing. Quare, whether Bees doe not Sleepe all Winter, and spare their Honey? Butterflies, and other Flies, doe not onely Sleepe, but lye as Dead all Winter; And yet with a little Heat of Sunne, or Fire, reuine againe. A Dormonse, both Winter and Summer, will Sleepe some dayes' together, and eat Nothing.

To restore Teeth in Age, were Magnale Naturae. It may be thought of. But howsoeuer the Nature of the Teeth deserueth to be enquired of, as well as the other Parts of Liuing Creatures Bodies.

There be Fiue Parts in the Bodies of Liuing-Creatures, that are of Hard Substance; The Skull; The Teeth; The Bones; The Hornes; and the Nailes. The greatest Quantity of Hard Substance Continued, is towards the Head. For there is the Skull of one Entire Bone; There are the Teeth; There are the Maxillary Bones; There is the Hard Bone, that is the Instrument of Hearing; And thence issue the Hornes: So that the Building of Liuing Creatures Bodies, is like the Building of a Timber-House, where the Walls, and other Parts haue Columnes, and Beames; But the Roofe is, in the better Sort of Houses, all Tile, or Lead, or Stone. As for Birds, they haue Three other Hard Substances proper to them; The Bill, which is of like Matter with the Teeth; For no Birds haue Teeth: The Shell of the Egge: And their Quills: For as for their Spurre, it is but a Naile. But no

Liuing-Creatures, that haue Shells very hard; (As Oysters, Cockles, Mussles, Scallops, Crabs, Lobsters, Crafish, Shrimps, and especially the Tortoise,) haue Bones within them, but onely little Gristles.

Bones, after full Growth, continue at a Stay: And so doth the Skull: Hornes, in some Creatures, are cast, and renued: Teeth stand at a Stay except their Wearing: As for Nailes, they grow continually: And Bills and Beakes will ouer-grow, and sometimes be cast; as in Eagles, and Parrots.

Most of the Hard Substances fly to the Extremes of the Body, As Skull, Hornes, Teeth, Nailes, and Beakes: Onely the Bones are more Inward, and clad with Flesh. As for the Entrailes, they are all without Bones; Saue that a Bone is (sometimes) found in the Heart of a Stag; And it may be in some other Creature.

The Skull hath Braines, as a kinde of Marrow, within it. The Back-Bone hath one Kinde of Marrow, which hath an Affinity with the Braine; And other Bones of the Body haue another. The Iaw-Bones haue no Marrow Seuered, but a little Pulpe of Marrow diffused. Teeth likewise are thought to haue a kind of Marrow diffused, which causeth the Sense, and Paine: But it is rather Sinnew; For Marrow hath no Sense; No more than Bloud. Horne is alike throughout; And so is the Naile.

None other of the Hard Substances haue Sense, but the Teeth: And the Teeth haue Sense, not onely of Paine, but of Cold.

But we will leaue the Enquiries of other Hard Substances, vnto their seuerall Places; And now enquire onely of the Teeth.

The Teeth are, in Men, of three Kindes: Sharpe, as the Fore-Teeth; Broad, as the Back-Teeth, which we call the Molar-Teeth, or Grinders; And Pointed-Teeth, or Canine, which are betweene both. But there haue beene some Men, that haue had their Teeth vndiuided, as of one whole Bone, with some little Marke in the Place of the Diuision; As Pyrrhus had. Some Creatures haue Ouer-long, or Out-growing Teeth, which wee call Fangs, or Tuskes; As Boares, Pikes, Salmons, and Dogs though lesse. Some Liuing Creatures haue Teeth against Teeth; As Men, and Horses; And some haue Teeth, especially their Master-Teeth, indented one within Another, like Sawes; As Lions; And so againe haue Dogs. Some

Fishes haue diuers Rowes of Teeth in the Roofes of their Mouthes; As Pikes, Salmons, Trouts, &c. And many more in Salt-Waters. Snakes, and other Serpents, haue Venomous Teeth; which are sometimes mistaken for their Sting.

No Beast that hath Hornes, hath Vpper Teeth; And no Beast, that hath Teeth aboue, wanteth them below: But yet if they be of the same kinde, it followeth not, that if the Hard Matter goeth not into Vpper Teeth, it will goe into Hornes; Not yet — conuerse; For Doe's, that haue no Hornes, haue no Vpper Teeth.

Horses haue, at three yeares old, a Tooth put forth, which they call the Colts Tooth; And at foure yeares old there commeth the Mark-Tooth, which hath a Hole, as big as you may lay a Pease within it; And that weareth shorter and shorter, euery yeare; Till that at eight yeares old, the Tooth is smooth, and the Hole gone; And then they say; That the Marke is out of the Horses Mouth.

The Teeth of Men breed first, when the Childe is about a yeare and halfe old: And then they cast them, and new come about seuen yeares old. But diuers haue Backward-Teeth come forth at Twenty, yea some at Thirty, and Forty. Quare of the manner of the Comming of them forth. They tell a Tale of the old Countesse of Desmond, who liued till she was seuen-score yeares old, that she did Dentire, twice, or thrice; Casting her old Teeth, and others Comming in their Place.

Teeth are much hurt by Sweet-Meats; And by Painting with Mercury; And by Things Ouer-hot; And by Things Ouer-cold; And by Rheumes. And the Paine of the Teeth, is one of the sharpest of Paines.

Concerning Teeth, those Things are to be Considered. 1. The Preseruing of them. 2. The Keeping of them White. 3. The Drawing of them with Least Paine. 4. The Staying and Easing of the Tooth-ach. 5. The Binding in of Artificiall Teeth, where haue beene strucken out. 6. And last of all, that Great One, of Restoring Teeth in Age. The Instances that giue any likelihood of Restoring Teeth in Age, are; The Late Comming of Teeth in some; And the Renewing of the Beakes in Birds, which are Commateriall with Teeth. Quare therefore more particularly how that commeth. And againe, the Renewing of Hornes. But yet that hath not beene knowne to haue beene prouoked by Art; Therfore let Triall be made, whether Hornes may be procured to grow in Beasts that are not

Horned, and how? And whether they may be procured to come Larger than vsuall; As to make an Oxe, or a Deere, haue a Greater Head of Hornes? And whether the Head of a Deere, that by Age is more Spitted, may be brought againe to be more Branched; For those Trialls, and the like, will shew, whether by Art such Hard Matter can be called, and prouoked. It may be tryed also, whether Birds may not haue some thing done to them, when they are Young, wherby they may be made to haue Greater, or Longer Bills; Or Greater and Longer Tallons? And whether Children may not haue some Wash, or Something to make their Teeth Better, and Stronger? Corall is in vse as an Helpe to the Teeth of Children.

Some Liuing Creatures generate but at certaine Seasons of the Yeare; As Deere, Sheepe, Wilde Conneyes, &c. And most Sorts of Birds, and Fishes: Others at any time of the Yeare, as Men; And all Domesticke Creatures; As Horses, Hogges, Dogges, Cats, &c. The Cause of Generation at all Seasons seemeth to be Fulnesse: For Generation is from Redundance. This Fulnesse ariseth from two Causes; Either from the Nature of the Creature, if it be Hot, and Moist, and Sanguine; Or from Plenty of Food. For the first, Men, Horses, Dogges, &c. which breed at all Seasons, are full of Heat, and Moisture; Dones are the fullest of Heat and Moisture amongst Birds, and therefore breed often; The Tame Doue almost continually. But Deere are a Melancholy Dry Creature, as appeareth by their Fearefulnesse, and the Hardnesse of their Flesh. Sheepe are a Cold Creature, as appeareth by their Mildnesse, and for that they seldome Drinke. Most sort of Birds are of a dry Substance in comparison of Beasts, Fishes are cold. For the second Cause, Fulnesse of Food; Men, Kine, Swine, Dogs, &c. seed full; And we see that those Creatures, which being Wilde, generate seldome, being Tame, generate often; Which is from Warmth, and Fulnesse of Food. We finde, that the Time of Going to Rut of Deore is in September; For that they need the whole Summers Feed and Grasse, to make them fit for Generation. And if Raine come Earely about the Middle of September, they goe to Rut somewhat the sooner; If Drought, somewhat the later. So Sheepe, in respect of their small Neat. generate about the same time, or

somewhat before. But for the most part, Creatures that generate at certaine Seasons, generate in the Spring; As Birds, and Fishes; For that the End of the Winter, and the Heat, and Comfort of the Spring prepareth them. There is also another Reason, why some Creatures generate at certaine Seasons: And that is the Relation of their Time of Bearing, to the time of Generation: For no Creature goeth to generate, whilest the Female is full; Nor whilest shee is busie in Sitting or Rearing her Young. And therefore it is found by Experience, that if you take the Egges, or Young Ones, out of the Neasts of Birds, they will fall to generate againe, three or foure times, one after another.

Of Liuing Creatures, some are Longer time in the Wombe, and some Shorter. Women goe commonly nine Moneths; The Cow and the Ewe about six Moneths; Doe's goe about nine Moneths; Mares eleuen Moneths; Bitches nine Weekes; Elephants are said to goe two Yeares; For the Receiued Tradition of ten Yeares is Fabulous. For Birds there is double Enquiry; The Distance betweene the Treading or Coupling, and the Laying of the Egge; And againe betweene the Egge Layed, and the Disclosing or Hetching. And amongst Birds, there is lesse Diuersity of Time, than amongst other Creatures; yet some there is: For the Hen sitteth but three Weekes; The Turky-Hen, Goose, and Ducke, a Moneth: Quare of others. The Cause of the great Difference of Times, amongst Liuing Creatures, is, Either from the Nature of the Kinde; Or from the Constitution of the Wombe. For the former, those that are longer in Comming to their Maturity or Growth, are longer in the Wombe; As is chiefly seene in Men; And so Elephants which are long in the Wombe, are long time in Comming to their full Growth. But in most other Kindes, the Constitution of the Wombe, (that is, the Hardnesse or Drinesse thereof,) is concurrent with the former Cause. For the — lt hath about foure yeares of Growth; And so the Fawne; And so the Calfe. But Whelps, which come to their Growth (commonly) within three Quarters of a yeare, are but nine Weekes in the Wombe. As for Birds, as there is lesse Diuersity, amongst them, in the time of their Bringing forth; So there is lesse Diuersity in the time of their Growth; Most of them comming to their Growth within a Twelue-Moneth.

Some Creatures bring forth many Young Ones at a Burthen; As Bitches, Hares, Conneyes, &c. Some (ordinatily) but One; As Women, Lionesses, &c. This may be caused, either by the Quantity of Sperme required to the Producing One of that Kinde; which if lesse be required, may admit greater Number; If more, fewer: Or by the Partitions and Cells of the Wombe, which may feuer the Sperme.

There is no doubt, but Light by Refraction will shew greater, as well as Things Coloured. For like as a Shilling, in the Bottomes of the Water. will shew greater; So will a Candle in a Lanthorne, in the Bottome of the Water. I haue heard of a Practise, that Glo-wormes in Glasses were put in the Water, to make the Fish come. But I am not yet informed, whether when a Diuer Diueth, hauing his Eyes open, and swimmeth vpon his Backe; whether (I say) he seeth Things in the Aire greater, or lesse. For it is manifest, that when the Eye standeth in the Finer Medium, and the Obiect is in the Grosser, things shew greater; But contrariwise, when the Eye is placed in the Grosser Medium, and the Obiect in the Finer, how it worketh I know not.

It would be well boulted out, whether great Refractions may not be made vpon Reflexions, as well as vpon Direct Beames. For Example, We see that take an Empty Basen, put an Angell of Gold, or what you will, into it; Then goe so farre from the Basen, till you cannot see the Angell, because it is not in a Right Line; Then fill the Basen with Water, and you shall see it out of his Place, because of the Reflexion. To proceed therefore, put a Looking-Glasse into a Basen of Water; I suppose you shall not see the Image in a Right Line, or at equall Angles, but aside. I know not, whether this Experiment may not be extended so, as you might see the Image, and not the Glasse; Which for Beauty, and Strangenesse, were a fine Proofe: For then you should see the Image like a Spirit in the Aire. As for Example, If there be a Cesterne or Poole of Water. you shall place ouer against it a Picture of the Deuill, or what you will, so as you doe not see the Water. Then put a Looking-Glasse in the Water: Now if you can see the Deuills Picture aside, not seeing the Water, it will looke like a Deuill indeed. They haue an old Tale in Oxford, that Friar Bacon walked betweene two

Steeples: Which was thought to be done by Glasses, when he walked vpon the Ground.

A Weighty Body put into Motion, is more easily impelled, than at first when it Resteth. The Cause is, Partly because Motion doth discusse the Torpour of Solide Bodies, Which beside their Motion of Grauity, haue in them a Naturall Appetite, not to moue at all; And partly, because a Body that resteth, doth get, by the Resistance of the Body vpon which it resteth, a stronger Compression of Parts, than it hath of it Selfe: And therefore needeth more Force to be put in Motion. For if a Weighty Body be Pensile, and hang but by a Thred, the Percussion will make an Impulsion very neare as easily, as if it were already in Motion.

A Body Ouer-great, or Ouer-small, will not be throwne so farre, as a Body of a Middle Sixe: So that (it seemeth) there must be a Commensuration, or Proportion, betweene the Body Moued, and the Force, to make it moue well. The Cause is, because to the Impulsion, there is requisite the Force of the Body that Moueth, and the Resistance of the Body that is Moued: And if the Body be too great, it yeeldeth too little; And if it be too small, it resisteth too little.

It is Common Experience, that no Weight will presse or cut so strong, being laid vpon a Body, as Falling, or strucken from aboue. It may be the Aire hath some part in furthering the Percussion: But the chiefe Cause I take to be, for that the Parts of the Body Moued, haue by Impulsion, or by the Motion of Grauity continued, a Compression in them, as well downwards, as they haue when they are throwne, or Shot thorow the Aire, forwards. I conceiue also, that the quicke Loose of that Motion, preuenteth the Resistance of the Body below; And Priority of the Force, (alwaies,) is of great Efficacy; As appeareth in infinite Instances.

Tickling is most in the Soles of the Feet, and vnder the Arme-Holes, and on the Sides. The Cause is, the Thinnesse of the Skin in those Parts; Ioyned with the Rarenesse of being touched there. For all Tickling is a light Motion of the Spirits, which the Thinnesse of the Skin, and Suddennesse, and Rarenesse of Touch, doe further: For we see, a Feather, or a Rush, drawne along the Lip. or Cheeke, doth tickle; Whereas a Thing more Obtuse, or a Touch more Hard, doth

not. And for Suddennesse; We see no Man can tickle himselfe: Wee see also, that the Palme of the Hand, though it hath as Thinne a Skin as the other Parts Mentioned, yet is not Ticklish, because it is accustomed to be Touched. Tickling also causeth Laughter. The Cause may be, the Emission of the Spirits, and so of the Breath, by a Flight from Titillation; For vpon Tickling, we see there is euer a Starting, or Shrinking away of the Part, to auoid it; And we see also, that if you Tickle the Nosthrills, with a Feather, or Straw, it procureth Sneezing; Which is a Sudden Emission of the Spirits, that doe likewise expell the Moisture. And Tickling is euer Painfull, and not well endured.

It is strange, that the Riuer of Nilus, Ouer-flowing, as it doth, the Country of AEgypt, there should be neuerthelesse little or no Raine in that Country. The Cause must be, Either in the Nature of the Water; Or in the Nature of the Aire; Or of Both. In the Water, it may be ascribed, either vnto the Long — of the Water: For Swift Running Waters vapour, not so much as Standing Waters; Or else to the Concoction of the Water; For Waters well Concocted vapour not so much, as Waters Raw; No more than Waters vpon the Fire doe vapour so much, after some time of Boyling, as at the first. And it is true, that the Water of Nilus is sweeter than other Waters in Taste; And it is excellent Good for the Stone, and Hypochondriacall Melancholy; Which sheweth it is Lenefying: And it runneth thorow a Countrey of a Hot Climate, and flat, without Shade, either of Woods, or Hills; Whereby the Sunne must needs haue great Power to Concoct it. As for the Aire, (from whence I conceiue this Want of Showers commeth chiefly;) The Cause must be, for that the Aire is, of it selfe, Thin and Thirsty; And as soone as euer it getteth any Moisture from the Water, it imbibeth, and dissipateth it, in the whole body of the Aire; And suffereth it not to remaine in Vapour; Whereby it might breed Raine.

It hath beene touched in the Title of Percolations, (Namely such as are Inwards,) that the Whites of Eggs, and Milke, doe clarifie; And it is certaine, that in AEgypt, they prepare and clarifie the Water of Nile, by putting it into great Iarres of Stone, and Stirring it about with a few Stamped Almonds; Wherewith they also besmeare the Mouth of the Vessell; And so draw it off, after it hath

rested some time. It were good, to trie this Clarifying with Almonds, in New Beere, or Must, to hasten, and perfect the Clarifying.

There be scarce to be found any Vegetables, that haue Branches, and no Leaues; except you allow Corall for one. But there is also in the Desarts of S. Macario in AEgypt, a Plant which is Long, Leauelesse, Browne of Colour, and Branched like Corall, faue that it closeth at the Top. This being set in Water within House, spreadeth and displayeth strangely; And the People thereabouts haue a Superstitious Beleefe, that in the Labour of Women, it helpeth to the Easie Deliuerance.

The Crystalline Venice Glasse, is reported to be a Mixture, in equall Portions, of Stones, brought from Pauia, by the Riuer Ticinum; And the Ashes of a Weed called by the Arabs Kall, which is gathered in a Desart betweene Alexandria and Rosetta; And is by the AEgyptians vsed first for Fuell; And then they crush the Ashes into Lumps, like a Stone; And so sell them to the Venetians for their Glasse-workes.

It is strange, and well to be noted, how long Carkasses haue continued Vncorrupt, and in their former Dimensions; As appeareth in the Mummies of AEgypt; Hauing lafted, as is conceiued, (some of them,) three thousand yeeres. It is true, they finde Meanes to draw forth the Braines, and to take forth the Entrailes, which are the Parts apteft to corrupt. But that is nothing to the Wonder: For wee see, what a Soft and Corruptible Substance the Flesh, of all the other Parts of the Body, is. But it should seeme, that according to our Obseruation, and Axiorne, in our hundredth Experiment, Putrefaction, which we conceiue to be so Naturall a Period of Bodies, is but an Accident; And that Matter maketh not that Haste to Corruption, that is conceiued. And therefore Bodies, in Shining-Amber; In Quicke-Siluer; In Balmes, (whereof wee now speake;) In Wax; In Honey; In Gummes; And (it may be) in Conseruatories of Snow; &c. are preserued very long. It need not goe for Repetition, if we resume againe that which wee said in the aforesaid Experiment, concerning Annihilation; Namely, that if you prouide against three Causes of Putrefaction, Bodies will not corrupt: The First is, that the Aire be excluded; For that

vndermineth the Body, and conspireth with the Spirit of the Body to dissolue it. The Second is, that the Body Adiacent and Ambiens be not Commateriall, but meerely Heterogeneall towards the Body that is to be presured: For if Nothing can be receiued by the One, Nothing can issue from the Other, Such are Quick-Siluer, & White-Amber, to Herbs, and Flies, and such Bodies. The Third is, that the Body to be preserued, be not of that Grasse, that it may corrupt within it selfe, although no Part of it issue into the Body Adiacent: And therefore it must be rather Thinne, and Small, than of Bulke. There is a Fourth Remedie also, which is; That if the Body to be preserued be of Bulke, as a Corps is, then the Body that Incloseth it, must haue a Vertue to draw forth, and drie the Moisture of the Inward Body; For else the Putrefaction will play within, though Nothing issue forth. I remember Liuy doth relate, that there were found, at a time, two Coffins of Lead, in a Tombe; Whereof the one contained the Body of King Numa; It being some foure hundred yeares after his Death: And the other, his Bookes of Sacred Rites and Ceremonies, and the Discipline of the Pontises; And that in the Coffin that had the Body, there was Nothing (at all) to be seene, but a little light Cinders about the Sides; But in the Coffin that had the Bookes, they were found as fresh, as if they had beene but newly Written; being written in Parchment, and couered ouer with Watch-Candles of Wax, three or foure fold. By this it seemeth, that the Romans. in Numa's time, were not so good Embalmers, as the AEgyptians were; Which was the Cause that the Body was vtterly consumed. But I finde in Plutarch, and Others, that when Augustus Caesar visited the Sepulchre of Alexander, the Great, in Alexandria, he found the Body to keepe his Dimension; But withall, that, notwithstanding all the Embalming, (which no doubt was of the best,) the Body was so Tender, as Caesar touching but the Nose of it, defaced it. Which maketh mee finde it very strange, that the Egyptian Mummies should be reported to be as Hard as Stone-Pitch: For I finde no difference but one; Which indeed may be very Materiall; Namely, that the Ancient AEgyptian Mummies, were shrowded in a Number of Folds of Linnen, besmeared with Gums, in manner of Seare-Cloth; Which it doth not appeare was practised vpon the Body of Alexander.

Neare the Castle of Catie, and by the Wells of Assan, in the Land of Idumea, a great Part of the Way, you would thinke the Sea were neare hand, though it be a good distance off: And it is Nothing, but the Shining of the Nitre, vpon the Sea-Sands; Such Abundance of Nitre the Shores there doe put forth.

The Dead-Sea, which vomiteth vp Bitumen, is of that Crassitude, as Liuing Bodies bound Hand and Foot, cast into it, haue beene borne vp and not sunke. Which sheweth, that all Sinking into Water, is but an Ouer-Weight of the Body, put into the Water, in respect of the Water: So that you may make Water so strong, and heauy, of Quicke-Siluer, (perhaps,) or the like, as may beare vp Iron: Of which I see no Vse, but Imposture. Wee see also, that all Metalls, except Gold, for the same reason swimme vpon Quicke-Siluer.

It is reported, that at the Feet of a Hill, neare the More mortuum, there is a Blacke Stone, (whereof Pilgrims make Fires,) which burneth like a Coale, and diminisheth not; But only waxeth Brighter, and Whiter. That it should doe so, is not strange; For wee see Iron Red Hot burneth, and consumeth not: But the Strangenesse is, that it should continue any time so: For Iron, as soone as it is out of the Fire, deadeth straight waies. Certainly, it were a Thing of great Vse, and Profit, if you could finde out Fuell, that would burne Hot, and yet last long, Neither am I altogether Incredulous, but there may be such Candles, as they say are made of Salamanders Wooll; Being a Kinde of Minerall, which whiteneth also in the Burning, and consumeth not. The Question is this; Flame must be made of somewhat; And commonly it is made of some Tangible Body, which hath Weight: But it is not impossible, perhaps, that it should be made of Spirit, or Vapour, in a Body; (which Spirit on Vapour hath no Weight;) such as is the Matter of Ignis —— s. But then you will say, that that Vapour also can last but a short time: To that it may be answered, That by the helpe of Oile, and Wax, and other Candle-Stuffe, the Flame may continue, and the Wieke not burne.

Sea-Coale last longer than Char-Coale; And Char-Coale of Roots, being coaled into great Peeces, last longer than Ordinary Char-Coale, Turfe, and Peat, and Cow-Sheards, are cheape Fuels, and last long.Small-Coale, or Briar-Coale, powred vpon Char-Coale, make them last longer. Sedge is a cheape Fuell to

Brew, or Bake with; the rather because it is good for Nothing else. Triall would be made of some Mixture of Sea-Coale with Earth, or Chalko; For if that Mixture be, as the Sea-Coale-Men vse it, priuily, to make the Bulke of the Coale greater, it is Deceit; But if it be vsed purposely, and be made knowne, it is Sauing.

It is, at this Day, in vse, in G —— to couch Pat-Sheards or Vessels of Earth, in their Walls, to gather the Wind from the Top; and to passe it downe in Spouts into Roomes. It is a Deuice for Freshnesse, in great Heats: And it is said, there are some Roomes in Italie, and Spaine, for Freshnesse, and Gathering the Winds, and Aire, in the Heats of Summer. But they be but Pennings of the Winds, and Enlarging them againe, and Making them Reuerberate, and goe round in Circles, rather than this Deuice of Spouts in the Wall.

There would be vsed much diligence, in the Choice of some Bodies, and Places, (as it were,) for the Testing of Aire; to discouer the Wholesomenesse or Vnwholesomenesse, as well of Seasons, as of the Seats of Dwellings. It is certaine, that there be some Heuses, wherein Confitures, and Pies, will gather Mould, more than in Others. And I am perswaded, that a Peece of Raw Flesh, or Fish, will sooner corrupt in some Aires, than in Others. They be noble Experiments, that can make this Discouerie; For they serue for a Naturall Diuination of Seasons; Better than the Astronomer can by their Figures: And againe, they teach Men where to chuse their Dwelling, for their better Health.

There is a Kinde of Stone, about Bethles-, which they grinde to Powder, and put into Water, whereof Cattell drinke; Which maketh them giue more Milke. Surely, there would be some better Trialls made of Mixtures of Water in Ponds for Cattell, to make them more Milch; Or to Fatten them; Or to Keepe them from Murraine, It may be, Chalke, and Nitre, are of the best.

It is reported, that in the Valley, neare the Mountaine Carmel, in Iudea, there is a Sand, which, of all other, hath most Affinitie with Glasse; Insomuch as other Mineralls, laid in it, turne to a Glassie Substance, without the Fire; And againe Glasse put into it, turneth into the Mother-Sand. The Thing is very strange, if it be true: And it is likeliest to be Caused by some Naturall Fornace, or Heat in the

Earth: And yet they doe not speake of any Eruption of Flames. It were good to trie in Glasse-Workes, whether the Crude Materialls of Glasse, mingled with Glasse, already made, and Re-moulten, doe not facilitate the Making of Glasse with lesse Heat.

In the Sea, vpon the South-West of Sicilie, much Corall is found. It is a Sub-Marine Plan. It hath no Leanes: It brancheth only when it is vnder Water; It is Soft, and Greene of Colour; But being brought into the Aire, it becommeth Hard, and Shining Red, as wee see. It is said also, to haue a White Berry; But wee finde it not brought ouer with the Corall. Belike it is cast away as nothing worth: Inquire better of it, for the Difcouerie of the Nature of the Plant.

The Manns of Calabria is the best, and in most Plenty. They gather it from the Leafe of the Mulberry Tree; But not of such Mulberry Trees, as grow in the Valley's. And Manns falleth vpon the Leaues by Night, as other Deawes doe. It should seeme, that before those Deawes come vpon Trees in the Valley's, they dissipate, and cannot hold out. It should seeme also, the Mulberry-Leafe, it selfe, hath some Coagulating Vertue, which inspissateth the Deaw, for that it is not found vpon other Trees: And wee see by the Silke-Worme, which feedeth vpon that Leafe, what's Dainty Smooth Iuyce it hath; And the Leaues also, (especially of the Blacke Mulberry,) are somewhat Bristly, which may helpe to preserue the Deaw. Certainly, it were not amisse, to obscrue a little better, the Deawes that fall vpon Trees, or Herbs, Growing on Mountaines; For, it may be, many Deawes fall, that spend before they come to the Valleys. And I suppose, that he that would gather the best May-Deaw for Medicine, should gather it from the Hills.

It is said, they haue a manner, to prepare their Greeke-Wines, to keepe them from Fuming, and Inebriating, by adding some Sulphur, or Allome: Whereof the one is Vnctnous, and the other is Astringent. And certaine it is, that those two Natures doe best represse Fumes. This Experiment would be transferred, vnto other Wine, and Strong Beere, by Putting in some like Substances, while they worke; Which may make them both to Fume lesse, and to Inflame lesse.

It is conceiued by some, (not improbably,) that the reason, why Wilde-Fires, (Whereof the principall Ingredient is Bitumen,) doe not quench with Water, is, for that the first Concretion of Bitumen is a Mixture, of a Fiery, and Watry Substance: So is not Sulphur. This appeareth, for that in the Place neare Puteoli, which they call the Court of Valcan, you shall heare, vnder the Earth, a Horrible Thundring of Fire, and Water, conflicting together: And there breake forth also Spouts of Boyling Water. Now that Place yeeldeth great Quantities of Bitumen; Whereas AEtna, and Vesuuius, and the like, which consist vpon Sulphur, shoot forth Smoake, and Ashes, and Pumice, but no Water. It is reported also, that Bitumen Mingled with Lime, and Put vnder Water, will make, as it were, an Artificiall Rocke; The Substance becommeth so Hard.

There is a Cement, compounded of Floure, Whites of Egges, and Stone powdred, that becommeth Hard as Marble; wherewith Piscina mirabilis, neare Cuma, is said to haue the Walls Plastered. And it is certaine, and tried, that the Powder of Load-Stone, and Flint, by the Addition of Whites of Egges, and Gumm-Dragon, made into Paste, will in a few dayes harden to the Hardnesse of a Stone.

It hath beene noted by the Ancients, that in Full or Impure Bodies, Vlcers or Hurts in the Leggs, are Hard to Cure; And in the Head more Easie. The Cause is, for that Vlcers or Hurts in the Leggs require Deficcation, which by the Defluxion of Humours to the Lower Parts is hindred; Whereas Hurts and Vlcers in the Head require it not; But contrariwise Drinesse maketh them more apt to Consolidate. And in Moderne Obseruation, the like difference hath beene found, betweene French-Men, and English-Men; Where of the ones Constitution is more Dry, and the others more Moist. And therefore a Hurt of the Head is harder to cure in a French-Man, and of the Legge in an English-Man.

It hath beene noted by the Ancients, that Southerne Winds, blowing much, without Raine, doe cause a Feuourous Disposition of the Yeare; But with Raine, not. The Cause is, for that Southerne Winds doe, of themselues, qualifie the Aire, to be apt to cause Feuers; But when Showers are ioyned, they doe Refrigerate in Part, and Checke the Sultry Heat of the Southerne Wind.

Therefore this holdeth not in the Sea-Coasts, because the Vapour of the Sea, without Showers, doth refresh.

It hath beene noted by the Ancients, that Wounds which are made with Brasse, heale more easily, than Wounds made with Iron. The Cause is, for that Brasse hath, in it selfe, a Sanatiue Vertue; And so in the very Instant helpeth somewhat: But Iron is Corrosiue, and not Sanatiue. And therefore it were good, that the Instruments which are vsed by Chirurgians about Wounds, were rather of Brasse, than Iron.

In the Cold Countries, when Mens Noses, and Eares are Mortified, and (as it were) Gangrened with Cold, if they come to a Fire, they rot off presently. The Cause is, for that the few Spirits, that remaine in those Parts, are suddenly drawne forth, and so Putrefaction is made Compleat. But Snow Put vpon them, helpeth; For that it preserueth those Spirits that remaine, till they can reuiue; And besides, Snow hath in it a Secret Warmth: As the Monke proued out of the Text; Qui dat Niuem sicut Lanam, Gelu sicut Cineres spargit. Whereby he did inferre, that Snow did warme like Wooll, and Frost did fret like Ashes. Warme Water also doth good, Because by little and little it openeth the Pores, without any sudden Working vpon the Spirits. This Experiment may be transferred vnto the Cure of Gangrenes, either Comming of themselues, or induced by too much Applying of Opiates: Wherein you must beware of Dry Heat, and resort to Things that are Refrigerant, with an Inward Warmth, and Vertue of Cherishing.

Weigh Iron, and Aqua Fortis, seuerally; Then dissolue the Iron in the Aqua Fortis: And weigh the Dissolution; And you shall finde it to beare as good Weight, as the Bodies did seuerally: Notwithstanding a good deale of Wast, by a thicke Vapour, that issueth during the Working: Which sheweth, that the Opening of a Body, doth increase the Weight. This was tried once, or twice, but I know not, whether there were any Errour, in the Triall.

Take of Aqua-Fortis two Ounces, of Quick-siluer two Drachmes; (For that Charge the Aqua-Fortis will beare;) The Dissolution will not beare a Flint, as big as a Nutmeg: Yet (no doubt) the Increasing of the Weight of Water, will increase his Power of Bearing: As we see Broine, when it is Salt enough, will beare an

Egge. And I remember well a Physitian, that vsed to giue some Minerall Baths for the Gout. &c. And the Body when it was put into the Bath, could not get downe so easily, as in Ordinary Water. But it seemeth, the Weight of the Quick-siluer, more than the Weight of a Stone; doth not compense the Weight of a Stone, more than the Weight of the Aqua-Fortis.

Let there be a Body of Vnequall Weight; (As of Wood and Lead, or Bone and Lead;) If you throw it from you with the Light-End forward it will turne, and the Weightier End will recouer to be Forwards; Vnlesse the Body be Ouer-long. The Cause is, for that the more Dense Body, hath a more Violent Pressure of the Parts, from the first Impulsion; Which is the Cause, (though heretofore not found out, as hath been often said,) of all Violent Motions: And when the Hinder Part moueth swifter, (for that it lesse endureth Pressure of Parts,) than the Forward Part can make way for it, it must needs be, that the Body turne ouer: For (turned) it can more easily draw forward the Lighter Part. Ga — laeus noteth it well; That if an Open Trough, wherein Water is, be driuen faster than the Water can follow, the Water gathereth vpon an heape, towards the Hinder End, where the Motion began; Which he supposeth, (holding confidently the Motion of the Earth,) to be the Cause of the Ebbing and Flowing of the Ocean; Because the Earth ouer-runneth the Water. Which Theory, though it be false, yet the first Experiment is true. As for the Inequality of the Pressure of Parts, it appeareth manifestly in this; That if you take a Body of Stone, or Iron, and another of Wood, of the same Magnitude, and Shape, and throw them with equall Force, you cannot possibly throw the Wood, so farre, as the Stone, or Iron.

It is certaine, (as it hath beene formerly, in part, touched,) that Water may be the Medium of Sounds. If you dash a Stone against a Stone in the Bottome of the Water, it maketh a Sound. So a long Pole strucke vpon Grauell, in the Bottome of the Water, maketh a Sound. Nay, if you should thinke that the Sound commeth vp by the Pole, and not by the Water, you shall finde that an Anchor, let downe by a Roape, maketh a Sound; And yet the Roape is no Solide Body, whereby the Sound can ascend.

All Obiects of the Senses, which are very Offensiue, doe cause the Spirits to retire; And vpon their Flight, the Parts are (in some degree) destitute; And so there is induced in them a Trepidation and Horrour. For Sounds, we see that the Grating of a Saw, or any very Harsh Noise, will set the Teeth on edge, and make all the Body Shiuer. For Tastes, we see that in the Taking of a Potion, or Pills, the Head, and the Necke shake. For Odious Smells, the like Effect followeth, which is lesse perceiued, because there is a Remedy at hand, by Stopping of the Nose: But in Horses, that can vse no such Help, we see the Smell of a Carrion, especially of a Dead Horse, maketh them fly away, and take on, almost as if they were Mad. For Feeling, if you come out of the Sunne, suddenly, into a Shade, there followeth a Chilnesse or Shiuering in all the Body. And euen in Sight, which hath (in effect) no Odious Obiect, Comming into Sudden Darknesse, induceth an Offer to Shiuer.

There is, in the City of Ticinum, in Italy, a Church, that hath Windownes onely from aboue: It is in Length an Hundred Feet, in Breadth Twenty Feet, and in Height neare Fifty; Hauing a Doore in the Middest. It reporteth the Voice, twelue or thirteene times, if you stand by the Close End-Wall, ouer against the Doore. The Eccho fadeth, and dyeth by little and little, as the Eccho at Pont-charenton doth. And the Voice soundeth, as if it came from aboue the Doore. And if you stand at the Lower End, or on either Side of the Doore, the Eccho holdeth; But if you stand in the Doore, or in the Middest iust ouer against the Doore, not. Note that all Eccho's sound better against Old Walls, than New; Because they are more Dry, and Hollow.

Those Effects, which are wrought by the Percussion of the Sense, and by Things in Fact, are produced likewise, in some degree, by the Imagination. Therefore if a Man see another eat Soure or Acide Things, which set the Teeth on edge, this Obiect tainteth the Imagination. So that hee that seeth the Thing done by another, hath his owne Teeth also set on edge. So if a Man see another turne swiftly, and long; Or if he looke vpon Wheeles that turne, Himselfe waxeth Turne-sicke. So if a Man be vpon an High Place, without Railes, or good Hold, except he be vsed to it, he is Ready to Fall: For Imagining a Fall, it putteth his

Spirits into the very Action of a Fall. So Many vpon the Seeing of others Bleed, or Strangled, or Tortured, Themselues are ready to faint, as if they Bled, or were in Strife.

Take a Stocke-Gilly-Flower, and tye it gently vpon a Sticke, and put them both into a Stoope Glasse, full of Quick-siluer, so that the Flower be couered: Then lay a little Weight vpon the Top of the Glasse, that may keepe the Sticke downe; And looke vpon them after foure or fiue daies; And you shall finde the Flower Fresh, and the Stalke Harder, and lesse Flexible, than it was. If you compare it with another Flower, gathered at the same time, it will be the more manifest. This sheweth, that Bodies doe preserue excellently in Quick-siluer; And not preserue only, but, by the Coldnesse of the Quick-siluer, Indurate; For the Freshnesse of the Flower may be meerely Conseruation; (which is the more to be obserued because the Quick-Siluer presseth the Flower;) But the Stiffenesse of the Stalke, cannot be without Induration, from the Cold (as it seemeth,) of the Quick-siluer.

It is reported by some of the Ancients, that in Cyprus, there is a Kinde of Iron, that being cut into Little Peeces, and put into the Ground, if it be well Watred, will increase into Greater Peeces. This is certaine, and knowne of Old; That Lead will multiply, and Increase; As hath beene seene in Old Statua's of Stone, which haue beene put in Cellars; The Feet of them being bound with Leaden Bands; Where (after a time,) there appeared, that the Lead did swell; Insomuch as it hanged vpon the Stone like Warts.

I call Drowning of Metalls, when that the Baser Metall, is so incorporate with the more Rich, as it can by no Meanes be separated againe: which is a kinde of Version, though False: As if Siluer should be inseparably incorporated with Gold; Or Copper, and Lead, with Siluer. The Ancient Electrum had in it a Fifth of Siluer to the Gold; And made a Compound Metall, as fit for most vses, as Gold; And more Resplendent, and more Qualified in some other Properties; But then that was easily Separated. This to doe priuily, or to make the Compound passe for the Rich Metall Simple, is an Adulteration, or Counterfeiting: But if it be done Auowedly, and without Disguizing, it may be a great Sauing of the

Richer Metall. I remember to haue heard of a Man, skilfull in Metalls, that a Fifteenth Part of Siluer, incorporate with Gold, will not be Recouered by any Water of Separation; Except you put a Greater Quantity of Siluer, to draw to it the Lesse; which (he said) is the last Refuge in Separations. But that is a tedious way, which no Man (almost) will thinke on. This would be better enquired; And the Quantity of the Fifteenth turned to a Twentieth; And likewise with some little Additionall, that may further the Intrinsique Incorporation. Note that Siluer in Gold will be detected by Weight, compared with the Dimension; But Lead in Silver, (Lead being the Weightier Metall,) will not be detected; If you take so much the more Siluer, as will counteruaile the Ouer-Weight of the Lead.

Gold is the onely Substance, which hath nothing in it Volatile, and yet melteth without much difficulty. The Melting sheweth that it is not Ieiune, or Scarce in Spirit. So that the Fixing of it, is not Want of Spirit to fly out, but the Equall Spreading of the Tangible Parts, and the Close Coaceruation of them: Whereby they haue the lesse Appetite, and no Meanes (at all) to issue forth. It were good therefore to try, whether Glasse Re-moulten doe leese any Weight? For the Parts in Glasse are euenly Spred; But they are not so Close as in Gold; As we see by the Easie Admission of Light, Heat, and Cold; And by the Smalnesse of the Weight. There be other Bodies, Fixed, which haue little, or no Spirit: So as there is nothing to fly out; As wee see in the Stuffe, whereof Coppells are made; Which they put into Furnaces; Vpon which Fire worketh not: So that there are three Causes of Fixation; The Euen Spreading both of the Spirits, and Tangible Parts; The Closenesse of the Tangible Parts; And the Ieiunenesse or Extreme Comminution of Spirits: Of which Three, the Two First may be ioyned with a Nature Liquefiable; The Last not.

It is Profound Contemplation in Nature, to consider of the Emptinesse, (as we may call it,) or Insatisfaction of seuerall Bodies; And of their Appetite to take in Others.Aire taketh in Lights, and Sounds, and Smells, and Vapours; And it is most manifest, that it doth it, with a kinde of Thirst, as not satisfied with his owne former Consistence; For else it would neuer receiue them in so suddenly, and easily. Water, and all Liquours, doe hastily receiue Dry and more

Terrestriall Bodies, Proportionable: And Dry Bodies, on the other side, drinke in Waters, and Liquours: So that, (as it was well said, by one of the Ancients, of Earthy and Watry Substances,) One is a Glue to another. Parchment, Skins, Cloth, &c. drinke in Liquours, though themselues be Entire Bodies, and not Comminuted, as Sand, and Ashes; Nor apparently Porous: Metalls themselues doe receiue in readily Strong-Waters; And Strong-Waters likewise doe readily pierce into Metalls, and Stones: And that Strong-Water will touch vpon Gold, that will not touch vpon Siluer; And è conuerso. And Gold, which seemeth by the Weight, to be the Closest, and most Solide Body, doth greedily drinke in Quick-Siluer. And it seemeth, that this Reception of other Bodies, is not Violent: For it is (many times) Reciprocall, and as it were with Consent. Of the Cause of this, and to what Axiome it may be referred, consider attentiuely; For as for the Pretty Assertion, that Matter is like a Common Strumpet, that desireth all Formes, it is but a Wandring Notion. Onely Flame doth not content it selfe to take in any other Body; But either, to ouercome and turne another Body into it Selfe, as by Victory; Or it Selfe to dye, and goe out,

IX. Century.

IT is certaine, that all Bodies whatsoeuer, though they haue no Sense, yet they haue Perception: For when one Body is applied to another, there is a Kinde of Election, to embrace that which is Agreeable, and to exclude or expell that which is Ingrate: And whether the Body be Alterant, or Altered, euermore a Perception precedeth Operation: For else all Bodies would be alike One to Another. And sometimes this Perception, in some Kinde of Bodies, is farre more Subtill than the Sense; So that the Sense is but a dull Thing in Comparison of it: Wee see a Weather-Glasse, will finde the least difference of the Weather, in Heat, or Cold, when Men finde it not. And this Perception also, is sometimes at Distance, as well as vpon the Touch; As when the Load-Stone draweth Iron; or Flame fireth Naphtha of Babylon, a great distance off. It is therefore a Subiect of a very Noble Enquiry, to enquire of the more Subtill Perceptions; For it is another Key to open Nature, as well as the Sense; And sometimes Better. And besides, it is a Principall Meanes of Naturall Diuination; For that which in these Perceptions appeareth early, in the great Effects commeth long after. It is true also, that it serueth to discouer that which is Hid, as well as to foretell that which is to Come; As it is in many Subtill Trialls; As to trie whether Seeds be old, or new, the Sense cannot informe: But if you boile them in Water, the New Seeds will sprout sooner: And so of Water, the Taste will not discouer the best Water; But the Speedy Consuming of it, and many other Meanes, which we haue heretofore set downe, will discouer it. So in all Physiognomy, the Lineaments of the Body will discouer those Naturall Inclinations of the Minde, which Dissimulation will conceale, or Discipline will suppresse. Wee shall therefore now handle only, those two Perceptions, which pertaine to Naturall Diuination, and Discouery: Leauing the Handling of Perception in other Things, to be disposed Elsewhere. Now it is true, that Diuination is attained by other Meanes; As if you know the Causes; If you know the Concomitants; you may iudge of the Effect to follow: And the like may be said of Discouery; But wee tie our Selues

here, to that Diuination and Discouery chiefly, which is Caused by an Early, or Subtill Perception.

The Aptnesse or Propension of Aire, or Water, to Corrupt or Putrifie, (no doubt,) is to be found before it breake forth into manifest Effects of Diseases, Blastings, or the like. Wee will therefore set downe some Prognosticks of Pestilentiall and Vnwholsome Yeares.

The Wind blowing much from the South, without Raine; And Wormes in the Oake-Apple; haue beene spoken of before. Also the Plenty of Frogs, Grashappers, Flies, and the like Creatures bred of Putrefaction, doth portend Pestilentiall Yeares.

Great, and Early Heats in the Spring, (and namely in May,) without Winds, portend the same; And generally so doe Yeares with little Wind, or Thunder.

Great Droughts in Summer, lasting till towards the End of August, and some Gentle Showres vpon them; And then some Drie Weather againe; Doe portend a Pestilent Summer, the Yeare following: For about the End of August, all the Sweetnesse of the Earth, which goeth into Plants, and Trees, is exhaled; (And much more if the August be dry;) So that nothing then can breathe forth of the Earth, but a grosse Vapour, which is apt to Corrupt the Aire: And that Vapour, by the first Showres, if they be Gentle, is released, and commeth forth abundantly. Therefore they that come abroad soone after those Showres, are commonly taken with Sicknesse: And in Affricke, no Body will stirre out of doores, after the first Showres. But if the Showres come vehemently, then they rather wash and fill the Earth, than giue it leaue to breathe forth presently. But if Drie Weather come againe, then it fixeth and continueth the Corruption of the Aire, vpon the first Showres begun; And maketh it of ill Influence, euen to the Next Summer; Except a very Frostie Winter discharge it; Which seldome succeedeth such Droughts.

The Lesser Infections, of the Small Pockes, Purple Feuers, Agues, in the Summer Precedent, and houering all Winter, doe portend a great Pestilence in the Summer following; For Putrefaction doth not rise to his height at once.

It were good to lay a Peece of Raw Flesh, or Fish, in the Open Aire; And if it Putrefie quickly, it is a Signe of a Disposition in the Aire to Putrefaction. And because you cannot be informed, whether the Putrefaction be quicke or late, except you compare this Experiment with the like Experiment in another Yeare, it were not amisse, in the same Yeare, and at the same Time, to lay one Peece of Flesh, or Fish, in the Open Aire, and another of the same Kinde and Bignesse, within Doores: For I iudge, that if a generall Disposition be in the Aire to Putrefie, the Flesh, or Fish, will sooner Putrefie abroad, where the Aire hath more power, than in the House, where it hath lesse, being many wayes corrected. And this Experiment would be made about the End of March: For that Season is likest to discouer, what the Winter hath done; And what the Summer following will doe vpon the Aire. And because the Aire (no doubt) receiueth great Tincture, and Infusion from the Earth; It were good to trie that Exposing of Flesh, or Fish, both vpon a Stake of Wood, some heighth aboue the Earth, and vpon the Flat of the Earth.

Take May-Dew, and see whether it putrifie quickly, or no? For that likewise may disclose the Qualitie of the Aire, and Vapour of the Earth, more or lesse Corrupted.

A Drie March, and a Drie May, portend a Wholesome Summer, if there be a Showring Aprill betweene: But otherwise, it is a Signe of a Pestilentiall Yeare.

As the Discouerie of the Disposition of the Aire, is good for the Prognosticks of Wholesome, and Vnwholesome Yeares; So it is of much more vse, for the Choice of Places to dwell in: At the least, for Lodges, and Retiring Places for Health; (For Mansion Houses respect Prouisions, as well as Health; Wherein the Experiments aboue mentioned may serue.

But for the Choice of Places, or Seats, it is good to make Triall, not only of Aptnesse of Aire to corrupt, but also of the Moisture and Drinesse of the Aire; and the Temper of it, in Heat, or Cold; For that may concerne Health diuersly. Wee see that there be some Houses, wherein Sweet Meats will relent, and Baked Meats will mould, more than in others; And Wainscoats will also sweat more; so that they will almost run with Water: All which, (no doubt,) are caused chiefly

by the Moistnesse of the Aire, in those Seats. But because it is better to know it, before a Man buildeth his House, than to finde it after, take the Experiments following.

Lay Wooll, or a Sponge, or Bread, in the Place you would trie, comparing it with some other Places; And see whether it doth not moisten, and make the Wooll, or Sponge, &c. more Ponderous, than the other? And if it doe, you may iudge of that Place, as Situate in a Grosse, and Moist Aire.

Because it is certaine, that in some Places, either by the Nature of the Earth, or by the Situation of Woods, and Hills, the Aire is more Vnequall, than in Others; and Inequalitie of Aire is euer an Enemy to Health; It were good to take two Weather-Glasses, Matches in all things, and to set them, for the same Houres of One day, in seuerall Places, where no Shade is, nor Enclosures: And to marke, when you set them, how farre the Water commeth; And to compare them, when you come againe, how the Water standeth then: And if you finde them Vnequall, you may be sure that the Place where the Water is lowest, is in the Warmer Aire, and the other in the Colder. And the greater the Inequalitie be, of the Ascent, or Descent of the Water, the greater is the Inequalitie of the Temper of the Aire.

The Predictions likewise of Cold and Long Winters, and Hot and Drie Summers, are good to be knowne; As well for the Discouerie of the Causes, as for diuers Prouisions. That of Plenty of Hawes, and Heps, and Briar-Berries, hath beene spoken of before. If Wainscast, or Stone, that haue vsed to Sweat, be more drie, in the Beginning of Winter; Or the Drops of the Eaues of Houses come more slowly downe, than they vse; it portendeth a Hard and Frostie Winter. The Cause is, for that it sheweth an Inclination of the Aire, to Drie Weather; which in Winter is euer ioyned with Frost.

Generally, a Moist and Coole Summer, portendeth a Hard Winter. The Cause is, for that the Vapours of the Earth, are not dissipated in the Summer, by the Sunne; And so they rebound vpon the Winter.

A Hot and Drie Summer, and Autumne, and especially if the Heat and Drought extend farre into September, portendeth an Open Beginning of Winter;

And Colds to succeed, toward the latter Part of the Winter, and the Beginning of the Spring: For till then, the former Heat and Drought beare the Sway; And the Vapours are not sufficiently Multiplied.

An Open and Warme Winter portendeth a Hot and Drie Summer: For the Vapours disperse into the Winter Showres; Whereas Cold and Frost keepeth them in, and transporteth them into the late Spring, and Summer following.

Birds that vse to change Countries, at certaine Seasons, if they come Earlier, doe shew the Temperature of Weather, according to that Country whence they came: As the Winter-Birds, (namely Woodcocks, Feldefares, &c.) if they come earlier, and out of the Northerne Countries, with vs shew Cold Winters. And if it be in the same Country, then they shew a Temperature of Season, like vnto that Season in which they come: As swallowes, Bats, Cuckooes, &c. that come towards Summer, if they come early, shew a Hot Summer to follow.

The Prognosticks, more Immediate, of Weather to follow soone after, are more Certaine than those of Seasons. The Resounding of the Sea vpon the Shoare; And the Murmur of Winds in the Woods, without apparent Wind; shew Wind to follow: For such Winds, breathing chiefly out of the Earth, are not at the first perceiued, except they be pent, by Water, or Wood. And therefore a Murmur out of Caues likewise portendeth as much.

The Vpper Regions of the Aire, perceiue the Collection of the Matter of Tempest, and Winds, before the Aire here below: And therefore the Obscuring of the Smaller Starres is is a Signe of Tempests following. And of this kinde you shall finde a Number of Instances in our Inquisition De Ventis.

Great Mountaines haue a Perception of the Disposition of the Aire to Tempests, sooner than the Valley's or Plaines below: And therefore they say in Wales, when certaine Hills haue their Night-Cups on, they meane Mischiefe. The Cause is, for that Tempests, which are for the most part bred aboue, in the Middle Region, (as they call it,) are soonest perceiued to collect in the Places next it.

The Aire, and Fire, haue Subtill Perceptions of Wind Rising, before Men finde it. Wee see the Trembling of a Candle will discouer a Wind that otherwise

wee doe not feele; And the Flexuous Burning of Flames doth shew the Aire beginneth to be vnquiet; And so doe Coales of Fire by Casting off the Ashes more than they vse. The Cause, is, for that no Wind, at the first, till it hath strooke and driven the Aire, is Apparent to the Sense: But Flame is easier to moue, than Aire: And for the Ashes, it is no maruell, though Wind vnperceiued shake them off; For wee vsually trie, which way the Wind bloweth, by casting vp Grasse, or Chaffe, or such light Things, into the Aire.

When Wind expireth from vnder the Sea; As it causeth some Resounding of the Water, (whereof wee spake before,) so it causeth some Light Motions of Bubbles, and White Circles of Froth. The Cause is, for that the Wind cannot be perceiued by the Sense, vntill there be an Eruption of a great Quantitie, from vnder the Water; And so it getteth into a Body: Whereas in the first Putting vp it commeth in little Portions.

We spake of the Ashes, that Coales cast off; And of Grasse, and Chaffe carried by the Wind; So any Light Thing that moueth, when we finde no Wind, sheweth a Wind at hand: As when Feathers, or Downe of Thistles, fly to and fro in the Aire.

For Prognosticks of Weather from Liuing Creatures, it is to be noted; That Creatures that Liue in the Open Aire, (Sub Diô,) must needs haue a Quicker Impression from the Aire, than Men that liue most within Doores; And especially Birds, who liue in the Aire, freest, and clearest; And are aptest by their Voice to tell Tales, what they finde; And likewise by the Motion of their Flight to expresse the same.

Water-Fowles, (as Sea-Gulls, More-Hens, &c.) when they flocke and fly together, from the Sea towards the Shores; And contrariwise, LandBirds, (as Crowes, Swallowes, &c.) when they fly from the Land to the Waters, and beat the Waters with their Wings; doe fore-shew Raine, and Wind. The Cause is, Pleasure, that both Kindes take in the Moistnesse, and Density of the Aire: And so desire to be in Motion, and vpon the Wing, whither soeuer they would otherwise goe: For it is no Maruell, that Water-Fowle doe ioy most in that Aire, which is likest Water; And LandBirds also, (many of them,) delight in Bathing,

and Moist Aire. For the same Reason also, many Birds doe proine their Feathers; And Geese doe gaggle; And Crowes seeme to call vpon Raine: All which is but the Comfort they seeme to receiue in the Relenting of the Aire.

The Heron, when she foareth high, (so as sometimes she is seene to passe ouer a Cloud,) sheweth Winds: But Kites flying aloft, shew Faire and Dry Weather. The Cause may be, for that they both mount most into the Aire, of that Temper, wherein they delight: And the Heron, being a Water-Fowle, taketh pleasure in the Aire, that is Condensed: And besides, being but Heauy of Wing, needeth the Helpe of the Grosser Aire. But the Kite affecteth not so much the Grossenesse of the Aire, as the Cold and Freshnesse thereof; For being a Bird of Prey, and therefore Hot, she delighteth in the Fresh Aire; And (many times) flyeth against the Wind; As Trouts, and Salmons swimme against the Streame. And yet it is true also, that all Birds finde an Ease in the depth of the Aire; As Swimmers doe in a Deepe Water. And therefore when they are aloft, they can vphold themselues with their Wings Spred, scarce mouing them.

Fishes, when they play towards the Top of the Water, doe commonly foretell Raine. The Cause is, for that a Fish hating the Dry, will not approach the Aire, till it groweth Moist; And when it is Dry, will fly it, and Swimme Lower.

Beasts doe take Comfort, (generally,) in a Moist Aire; And it maketh them eat their Meat better: And therefore Sheepe will get vp betimes in the Morning, to feed, against Raine: And Cattell, and Deere, and Conneyes, will feed hard before Raine: And a Heifer, will put vp his Nose, and snuffe in the Aire, against Raine.

The Trifoile, against Raine, swelleth in the Stalke; and so standeth more vpright; For by Wet, Stalkes doe erect, and Leaues bow downe. I here is a Small Red Flower in the Stubble-Fields, which Country People call the Wincopipe; Which if it open in the Morning, you may be sure of a faire Day to follow.

Euen in Men, Aches, and Hurts, and Cornes, doe engrieue, either towards Raine, or towards Frost: For the One maketh the Humours more to Abound; And the Other maketh them Sharper. So we see both Extremes bring the Gout.

Wormes, Vermine, &c. doe fore-shew (likewise) Raine: For Earthwormes will come forth, and Moules will cast vp more, and Fleas bite more, against Raine.

Solide Bodies likewise fore-shew Raine. As Stones, and Wainscot, when they sweat: And Boxes, and Peggs of Wood, when they Draw, and Wind hard; Though the Former be but from an Outward Cause; For that the Stone, or Wainscot, turneth and beateth backe the Aire against it selfe; But the latter is an Inward Swelling of the Body of the Wood it selfe.

Apetite is moued chiefly by Things that are Cold, and Dry: The Cause, is for that Cold is a Kinde of Indigence of Nature, and calleth vpon Supply; And so is Drinesse: And therefore all Soure Things, (as Vinegar, Iuyce of Limons, Oyle of Vitrioll, &c.) prouoke Appetite. And the Disease, which they call Appetitus Caninus, consisteth in the Matter of an Acide and Glassy Flegme, in the Mouth of the Stomach. Appetite is also moued by Soure Things; For that Soure Things, induce a Contraction in the Nerues, placed in the Mouth of the Stomach; Which is a great Cause of Appetite. As for the Cause, why Onions, and Salt, and Pepper, in Baked Meats, moue Appetite, it is by Vellication of those Nerues; For Motion whetteth. As for Worme-Wood, Oliues, Capers, and others of that kinde, which participate of Bitternesse, they moue Appetite by Abstersion. So as there be foure Principall Causes of Appetite; The Refrigeration of the Stomach, ioyned with some Drinesse; Contraction; Vellication; And Abstersion: Besides Hunger, which is an Emptinesse: And yet Ouer Fasting doth (many times) cause the Appetite to cease; For that Want of Meat maketh the Stomach draw Humours; And such Humours as are Light, and Cholericke, which quench Appetite most.

It hath beene obserued by the Ancients, that where a Raine-Bow seemeth no hang ouer, or to touch, there breatheth forth a Sweet Smell. The Cause is, for that this happeneth but in certaine Matters, which haue in themselues some Sweetnesse; Which the Gentle Dew of the Raine-Bow doth draw forth. And the like doe Safe Showers; For they also make the Ground Sweet: But none are so delicate as the Dew of the Rain-bow, where it falleth. It may be also, that the Water it selfe bath some Sweetnesse: For the Raine-Bow consisteth of a Glo —

eration of Small Drops, which cannot possibly fall, but from the Aire, that is very Low: And therefore may hold the very Sweetnesse of the Herbs, and Flowers, as a Distilled Water: For Raine, and other Dew, that fall from high, cannot preserue the Smell, being dissipated in the drawing vp: Neither doe we know, whether some Water it selfe, may not haue some degree of Sweetnesse. It is true, that wee finde it sensibly in no Poole, Riuer, nor Fountaine; But good Earth, newly turned vp, hath a Freshnesse, and good Sent; Which water, if it be not too Equall, (For Equall Obiects neuer moue the Sense.) may also haue. Certaine it is, that Bay-Salt, which is but a kinde of Water Congealed, will sometimes smell like Violets.

To Sweet Smells Heat is requisite, to Concoct the Matter; And some Moisture to Spread the Breath of them. For Heat, we see that Woods, and Spices, are more Odorate in the Hot Countries, than in the Cold: For Moisture, we see that Things too much Dried, lose their Sweetnesse: And Flowers growing, smell better in a Morning, or Euening, than at Noone. Some Sweet Smells are destroyed by Approach to the Fire; As Violets, Wall-Flowers, Gilly-Flowers, Pinckes; And generally all Flowers that haue Coole and Delicate Spirits. Some continue both on the Fire, and from the Fire, As Rose-Water, &c. Some doe scarce come forth, or at least not so pleasantly, as by meanes of the Fire; as Iuniper, Sweet Gums, &c. And all Smells, that are Enclosed in a Fast Body: But (generally) those Smells are the most Gratefull, where the Degree of Heat is Small; Or where the Strength of the Smell is allayed; For these Things doe rather wooe the Sense, than Satiate it. And therefore the Smell of Violets, and Roses, exceedeth in Sweetnesse that of Spices, and Gummes; And the Strongest Sort of Smells, are best in a weft, a farre off.

It is certaine, that no Smell issueth, but with Emission of some Corporeall Substance; Not as it is in Light, and Colours, and in Sounds. For wee see plainly, that Smell doth spread nothing that distance, that the other doe. It is true, that some Woods of Orenges, and Heathes of RoseMary, will Smell a great way into the Sea, perhaps twenty Miles; But what is that, since a Peale of Ordnance will do as much, which moueth in a small compasse? Whereas those Woods, and

Heathes, are of Vast Spaces: Besides we see that Smells doe adhere to Hard Bodies; As in Persuming of Gloues, &c. which sheweth them Corporeall; And doe Last a great while, which Sounds, and Light doe not.

The Excrements of most Creatures Smell ill; Chiefly to the same Creature that voideth them: For we see, besides that of Man, that Pigeons, and Horses thriue best, if their Houses, and Stables be kept Sweet; And so of Cage-Birds: And the Cat burieth that which shee voideth: And it holdeth chiefly in those Beasts, which feed vpon Flesh.Dogs (almost) onely of Beasts, delight in Fetide Odours; Which sheweth there is somewhat in their Sense of Smell, differing from the Smells of other Beasts. But the Cause, why Excrements smell ill, is manifest; For that the Body it selfe reiecteth them; Much more the Spirits: And we see, that those Excrements, that are of the First Digestion; Smell the worst; As the Excrements from the Belly: Those that are from the Second Digestion, lesse ill; As Vrine; And those that are from the Third, yet lesse; For Sweat is not so bad, as the other two; Especially of some Persons, that are full of Heat. Likewise most Putrefactions are of an Odious Smell: For they smell either Fetide, or Mouldy. The Cause may be, for that Putrefaction doth bring forth such a Consistence, as is most Contrary to the Consistence of the Body, whilst it is Sound: For it is a meere dissolution of that Forme. Besides, there is another Reason which is Profound: And it is, that the Obiects that please any of the Senses, haue (all) some Equality, and (as it were) Order, in their Composition: But where those are wanting, the Obiect is euer Ingrate. So Mixture of many Disagreeing Colours is euer vnpleasant to the Eye: Mixture of Discordant Sounds is vnpleasant to the Eare: Mixture, or Hotch-Potch of many Tastes, is vnpleasant to the Taste: Harshnesse and Ruggednesse of Bodies, is vnpleasant to the Touch: Now it is certaine, that all Putrefaction, being a Dissolution of the first Forme, is a meere Confusion, and Vnformed Mixture of the Part. Neuerthelesse, it is strange, and seemeth to Crosse the former Obseruation, that some Putrefactions and Excrements doe yeeld Excellent Odours; As Ciuet, and Muske; And as some thinke Amber-Greece: For diuers take it, (though vnprobably,) to come from the Sperme of Fish: And the Mosse, wee spake of

from Apple-Trees, is little better than an Excretion. The Reason may be, for that there passeth in the Excrements, and remaineth in the Putrefactions, some good Spirits; especially where they proceed from Creatures, that are very Hot. But it may be also ioyned with a further Cause, which is more Subtill; And it is, that the Senses loue not to be Ouerpleased; But to haue a C —— — of somewhat is in it selfe Ingrate. Certainly, we see how Discords in Musicke, falling vpon Concords, make the Sweetest Straines: And we see againe, what Strange Tastes delight the Taste; As Red-Herrings, Caueary, Parmizan, &c. And it may be, the same holdeth in Smells. For those kinde of Smells, that we haue mentioned, are all Strong, and doe Pull and Vellicate the Sense. And wee finde also, that Places where Men Vrine, commonly haue some smell of Violets: And Vrine, if one hath eaten Nutmegge, hath so too.

The Sloathfull, Generall, and Indefinite Contemplations, and Notions, of the Elements, and their Coniugations; Of the Influences of Heauen; Of Heat, Cold, Moisture, Drought; Qualities, Active, Passive; And the like; haue swallowed vp the true Passages, and Processes, and Affects, and Consistences of Matter, and Naturall Bodies. Therefore they are to be set aside, being but Notionall, and ill Limited; And Definite Axiomes are to be drawne out of Measured Instances: And so Assent to be made to the more Generall Axiomes, by Scale. And of these Kindes of Processes of Natures, and Characters of Matter, we will now set downe some Instances.

All Putrefactions come chiefly from the Inward Spirits of the Body; And partly also from the Ambient Body, be it Aire, Liquour, or whatsoeuer else. And this last, by two Meanes: Either by Ingresse of the Substance of the Ambient Body, into the Body Putrified; Or by Excitation and Sollicitation of the Body Putrified, and the Parts thereof, by the Body Ambient. As for the Receiued Opinion, that Putrefaction is caused, either by Cold, or Peregrine and Preternaturall Heat, it is but Nugation: For Cold in Things Inanimate, is the greatest Enemy that is, to Putrefaction; though it extinguisheth Viuification, which euer consisteth in Spirits Attenuate. which the Cold doth congeale, and coagulate. And as for the Peregrins Heat, it is thus farre true; That if the

Proportion of the Aduentiue Heat, be greatly Predominant, to the Naturall Heat, and Spirits of the Body, it tendeth to Dissolution, or Notable Alteration. But this is wrought by Emission, or Suppression, or Suffocation, of the Natiue Spirits; And also by the Disordination, and Discomposture of the Tangible Parts; And other Passages of Nature; And not by a Conflict of Heats.

In Versions, or Maine Alterations of Bodies, there is a Medium between the Body, as it is at first, and the Body Resulting; which Medium is Corpus imperfectè Mistum, and is Transitory, and not durable; As Mists, Smoaks, Vapours, Chylus in the Stomach, Liuing Creatures in the first Vinification: And the Middle Action, which produceth such Imperfect Bodies, is fitly called, (by some of the Ancients,) Inquination, or Inconcoction, which is a Kinde of Putrefaction; For the Parts are in Confusion, till they settle, one way, or other.

The word Concoction, or Digestion, is chiefly taken into vse from Liuing Creatures, and their Organs; And from thence extended to Liquours, and Fruits, &c. Therefore they speake of Meat Concocted; Vrine and Excrements Concocted; And the Foure Disgestions, (In the Stomach; In the Liuer; In the Arteries and Nerues; And in the Seuerall Parts of the Body;) are likewise called Concoctions: And they are all made to be the Workes of Heat: All which Notions are but ignorant Catches of a few Things, which are most Obuious to Mens Obseruations. The Constantest Notion of Concoction is, that it should signifie the Degrees of Alteration, of one Body into another, from Crudity to Perfect Concoction; Which is the Vltimity of that Action, or Processe: And while the Body to be Conuerted and Altered, is too strong for the Efficient, that should Conuert, or Alter it, (whereby it resisteth and holdeth fast in some degree the first Forme, or Consistence;) it is (all that while,) Crude, and Inconcoct; And the Processe is to be called Crudity and Inconcoction. It is true, that Concoction is, in great part, the Worke of Heat; But not the Worke of Heat alone: For all Things, that further the Conuersion, or Alteration, (as Rest, Mixture of a Body already Concocted, &c.) are also Meanes to Concoction. And there are of Concoction two Periods; The one Assimilation, or Absolute Conuersion and Subaction; The other Maturation: whereof the Former is most conspicuous in the

Bodies of Liuing Creatures; In which there is an Absolute Conuersion, and Assimilation of the Nourishment into the Body: And likewise in the Bodies of Plants: And againe in Metalls, where there is a full Transmutation. The other, (which is Maturation,) is seene in Liquours, and Fruits; wherein there is not desired, nor pretended, an vtter Conuersion, but onely an Alteration to that Forme, which is most sought, for Mans vse; As in Clarifying of Drinkes; Ripening of Fruits, &c. But note, that there be two Kindes of Absolute Conuersions; The one is, when a Body is conuerted into another Body, which was before; As when Nourishment is turned into Flesh; That is it which wee call Assimilation. The other is, when the Conuersion is into a Body meerely New, and which was not before; As if Siluer should be turned to Gold; or Iron to Copper: And this Conuersion is better called, for distinctions sake, Transmutation.

There are also diuers other Great Alterations of Matter, and Bodies, besides those that tend to Concoction, and Maturation; For whatsoeuer doth so alter a Body, as it returneth not againe to that it was, may be called Alteratio Maior: As when Meat is Boyled, or Roasted, or Fried, &c. Or when Bread and Meat are Baked; Or when Cheese is made of Curds, or Butter of Creame, or Goales of wood, or Brickes of Earth; And a Number of others. But to apply Notions Philosophicall to Plebcian Termes; Or to say, where the Notions cannot fitly be reconciled, that there wanteth a Terme, or Nomenclature for it; (as the Ancients vsed;) They be but Shifts of Ignorance; For Knowledge will be euer a Wandring and Indigested Thing, if it be but a Commixture of a few Notions, that are at hand and occurre, and not excited from sufficient Number of Instances, and those well collated.

The Consistences of Bodies are very diuers: Dense, Rare; Tangible, Pneumaticall, Volatile, Fixed; Determinate, Not Determinate, Hard, Soft; Cleauing, Not Cleauing; Congealeable, Not Congealeable; Liquefiable, Not Liquefiable; Fragile, Tough; Flexible Inflexible; Tractile, or to be drawen forth in length, Intractile; Porous, Solide; Equall, and Smooth, Vnequall, Venous, and Fibrous, and with Graines, Entire; And diuers Others; All which to referre to

Heat, and Cold; and Moisture, and Drought, is a Compendious and Inutile Speculation. But of these see principally our Abecedarium Nature; And otherwise Sparfim in this in our Sylua Syluarum: Neuerthelesse in some good part, We shall handle diuers of them now presently.

Liquefiable, and Not Liquefiable, proceed from these Causes: Liquefaction is euer caused by the Detention of the Spirits, which play within the Body, and Open it. Therefore such Bodies, as are more Turgide of Spirit; Or that haue their Spirits more Sraitly Imprisoned; Or againe that hold them Better Pleased and Content; are Liquefiable: For these three Dispositions of Bodies, doe arrest the Emission of the Spirits. An Example of the first two Properties is in Metalls; And of the Last in Grease, Pitch, Sulphure, Butter, Wax, &c. The Disposition not to Liquefie proceedeth from the Easie Emission of the Spirits; whereby the Grosser Parts contract; And therefore, Bodies Ieiune of Spirits; Or which part with their Spirits more Willingly; are not Liquefiable; As Wood, Clay, Freestone, &c. But yet, euen many of those Bodies, that will not Melt, or will hardly Melt, will notwithstanding Soften; As Iron in the Forge; And a Sticke bathed in Hot Ashes, which thereby becommeth more Flexible. Moreouer, there are some Bodies, which doe Liquefie, or dissolue by Fire; As Metalls, Wax, &c. And other Bodies, which dissolue in Water; As Salt, Sugar, &c. The Cause of the former proceedeth from the Dilatation of the Spirits by Heat: The Cause of the Latter proceedeth from the Opening of the Tangible Parts, which desire to receiue the Liquour. Againe, there are some Bodies, that dissolue with both; As Gumme, &c. And those be such Bodies, as on the One Side haue good store of Spirit; And on the other Side, haue the Tangible Parts Indigent of Moisture; For the former helpeth to the Dilating of the Spirits by the Fire; And the Latter stimulateth the Parts to Receiue the Liquour.

Of Bodies, some are Fragile; And some are Tough, and Not Fragile; And in the Breaking, some Fragile Bodies breake but where the Force is; Some shatter and fly in many Peeces. Of Fragility the Cause is an Impotency to be Extended: And therefore Stone is more Fragile than Metall; And so Fictile Earth is more Fragile than Crude Earth; And Dry Wood than Greene. And the Cause of this

Vnaptnesse to Extension, is the Small Quantity of Spirits; (For it is the Spirit that furthereth the Extension or Dilatation of Bodies;) And it is euer Concomitant with Porosity, and with Drinesse in the Tangible Parts: Contrariwise, Tough Bodies haue more Spirit, and sewer Pores, and Moister Tangible Parts: Therefore wee see that Parchment, or Leather will stretch, Paper will not; Woollen Cloth will tenter, Linnen scarcely.

All Solide Bodies consist of Parts of two seuerall Natures; Pneumaticall, and Tangible; And it is well to be noted, that the Pneumaticall Substance is in some Bodies, the Nature Spirit of the Body; And in some other, plaine Aire that is gotten in; As in Bodies desiccate, by Heat, or Age: For in them, when the Natiue Spirit goeth forth, and the Moisture with it, the Aire with time getteth into the Pores. And those Bodies are euer the more Fragile; For the Natiue Spirit is more Yeelding, and Extensiue, (especially to follow the Parts,) than Aire. The Natiue Spirits also admit great Diuersitie; As Hot, Cold, Active, Dull, &c. Whence proceed most of the Vertues, and Qualities (as wee call them) of Bodies: But the Aire intermixt, is without Vertues, and maketh Things Infioide, and without any Extimulation.

The Concretion of Bodies is (commonly) solued by the Contrary; As Ice, which is congealed by Gold, is dissolued by Heat; Salt and Sugar, which are Excocted by Heat, are Dissolued by Cold, and Moisture. The Cause is, for that these Operations, are rather Returnes to their former Nature, than Alterations: So that the Contrary cureth. As for Oyle, it doth neither easily congeale with Cold, nor thicken with Heat. The Cause of both Effects, though they be produced by Contrary Efficients, seemeth to be the Same; And that is, because the Spirit of the Oyle, by either Meanes, exhaleth little; For the Cold keepeth it in; and the Heat, (except it be Vehement,) doth not call it forth. As for Cold, though it take hold of the Tangible Parts, yet as to the Spirits, it doth rather make them Swell, than Congeale them: As when Ice is congealed in a Cup, the Ice will Swell in stead of Contracting; And sometimes Rift.

Of Bodies, some (wee see) are Hard, and some Soft: The Hardnesse is caused (chiefly) by the Ieiunenesse of the Spirits; And their Imparitie with the Tangible

Parts: Both which, if they be in a greater degree, maketh them, not only Hard, but Fragile, and lesse Enduring of Pressure; As Steele, Stone, Glasse, Drie Wood, &c.Softnesse commeth (contrariwise) by the Greater Quantitie of Spirits; (which euer helpeth to Induce Yeelding and Cession;) And by the more Equall Spreading of the Tangible Parts, which thereby are more Sliding, and Following; As in Gold, Lead, Wax, &c. But note, that Soft Bodies, (as wee vse the word,) are of two Kinds; The one, that easily glueth place to another Body, but altereth not Bulke, by Rising in other Places: And therefore wee see that Wax, if you put any Thing into it, doth not rise in Bulke, but only giueth Place: For you may not thinke, that in Printing of Wax, the Wax riseth vp at all; But only the depressed Part giueth place, and the other remaineth as it was. The other, that altereth Bulke in the Cession; As Water, or other Liquours, if you put a Stone, or any Thing into them, they giue place (indeed) easily, but then they rise all ouer: Which is a False Cession; For it is in Place, and not in Body.

All Bodies Ductile, and Tensile, (as Metals that will be drawne into Wires; Wooll and Towe that will be drawne into Yarne, or Thred;) haue in them the Appetite of Not Discontinuing, Strong; Which maketh them follow the Force, that pulleth them out; And yet so, as not to Discontinue or forsake their owne Body.Viscous Bodies, (likewise,) as Pitch, Wax, Bird-Lime, Cheese toasted, will draw forth, and roape. But the difference betweene Bodies Fibrous, and Bodies Viscous, is Plaine; For all Wooll, and Towe, and Cotton, and Silke, (especially raw Silke,) haue, besides their Desire of Continuance, in regard of the Tenuitie of their Thred, a Greedinesse of Moisture; And by Moisture to ioyne and incorporate with other Thred; Especially if there be a little Wreathing; As appeareth by the Twisting of Thred; And the Practise of Twirling about of Spindles. And wee see also, that Gold and Siluer Thred cannot be made without Twisting.

The Differences of Impressible; and Not Impressible Figurable; and Not Figurable; Mouldable and Not Mouldable; Scissile and Not Scissile; And many other Passions of Matter, are Plebcian Notions, applied vnto the Instruments and Vses which Men ordinarily practise; But they are all but the Effects of some of

these Causes following; Which we will Enumerate without Applying them, because that would be too long. The First is the Cession, or Not Cession of Bodies, into a Smaller Space or Roome, keeping the Outward Bulke, and not flying vp. The Second is the Stronger or Weaker Appetite, in Bodies, to Continuitie, and to flie Discontinuitie. The Third is the Disposition of Bodies, to Contract, or Not Contract; And againe, to Extend, or Not Extend. The Fourth is the Small Quantitie, or Great Quantitie, of the Pneumaticall in Bodies. The Fifth is the Nature of the Pneumalicall, whether is — Natiue Spirit of the Body, or Common Aire. The Sixth is, the Nature of the Natiue Spirits in the Body, whether they be Actiue and Eager, or Dull and Gentle. The Seuenth is the Emission or Detention of the Spirits in Bodies. The Eighth is the Dilatation, or Contraction of the Spirits in Bodies, while they are detained. The Ninth is the Collocation of the Spirits in Bodies; whether the Collocation be Equall, or Vnequall; And againe, whether the Spirits be Coaceruate, or Diffused. The Tenth is the Densitie, or Raritie of the Tangible Parts. The Eleuenth is the Equalitie or Inequalitie of the Tangible Parts. The Twelfth is the Disgestion, or Cruditie of the Tangible Parts. The Thirteenth is the Nature of the Matter, whether Sulphureous or Mercuriall, Watrie or Oylie, Drie and Terrestriall, or Moìst and Liquid; which Natures of Sulphureous and Mercuriall, seeme to be Natures Radicall, and Principiall. The Fourteenth is the Placing of the Tangible Parts, in Length, or Transuerse; (As it is in the Warpe, and the Woofe, of Textiles;) More Inward, or More Outward; &c. The Fifteenth is the Porofitie, or Imporositie betwixt the Tangible Parts; And the Greatnesse, or Smalnesse of the Pores. The Sixteenth is the Collocation and Pesture of the Pores. There may be more Causes; but these doe occurre for the Present.

Take Lead, and melt it, and in the Middest of it, when it beginneth to Congeale, make a little Dint, or Hole, and put Quicke-Siluer wrapped in a Peece of Linnen into that Hole, and the Quicke-Siluer will fix, and run no more, and endure the Hammer. This is a Noble Instance of Induration, by Consent of one Body with another, and Motion of Excitation to Imitate; For to ascribe it only to the Vapour of Lead, is lesse Probable. Quare whether the Fixing may be in such

a degree, as it will be Figured like other Metals? For if so, you may make Works of it for some purposes, so they come not neere the Fire.

Sugar hath put downe the vse of Honey; Insomuch as wee haue lost those Obseruations, and Preparations of Honey, which the Ancients had, when it was more in Price. First, it seemeth that there was, in old time, Tree-Honey, as well as Bee-Honey; Which was the Teare or Bloud issuing from the Tree: Insomuch as one of the Ancients relateth, that in Trebisond, there was Honey issuing from the Box-Trees, which made Men Mad. Againe, in Ancient time, there was a Kinde of Honey, which either of the owne Nature, or by Art, would grow as Hard as Sugar; And was not so Lushious as Ours. They had also a Wine of Honey, which they made thus. They crushed the Honey into a great Quantitie of Water, and then strained the Liquour; After they boyled it in a Copper to the halfe: Then they powred it into Earthen Vessels, for a small time; And after tunned it into Vessels of Wood, and kept it for many years. They haue also, at this day, in Russia, and those Northerne Countries, Mead Simple, which (well made, and seasoned) is a good wholesome Drinke, and very Cleare. They vse also in Wales, a Compound Drinke of Mead, with Herbs, and Spices. But meane-while it were good, in recompence of that wee haue lost in Honey, there were brought in vse a Sugar Mead- (for so wee may call it,) though without any Mixture at all of Honey; And to brew it, and keepe it stale, as they vse Mead; For certainly, though it would not be so Abster siue, and Opening, and Solutiue a Drinke as Mead; yet it will be more gratefull to the Stomach, and more Lenitiue, and fit to be vsed in Sharpe Diseases. For wee see, that the vse of Sugar in Beere, and Ale, hath good Effects in such Cases.

It is reported by the Ancients, that there was a Kinde of Steele, in some places, which would polish almost as white and bright as Siluer. And that there was in India a Kinde of Brasse, which (being polished) could scarce be discerned from Gold. This was in the Naturall Vre; But I am doubtfull, whether Men haue sufficiently refined Metals, which we count Base; As whether Iron, Brasse, and Tinne, be refined to the Heighth? But when they come to such a Finenesse, as serueth the ordinary vse, they trie no further.

There haue beene found certaine Cements vnder Earth, that are very Soft; And yet, taken forth into the Sunne, harden as Hard as Marble: There are also ordinary Quarries in Sommerset-Shire, which in the Quarry cut soft to any Bignesse, and in the Building proue firme, and hard.

Liuing Creatures (generally) doe change their Haire with Age, turning to be Gray, and White: As is seene in Men, though some Earlier, some Later; In Horses, that are Dappled, and turne White; In Old Squirrels, that turne Grisly; And many Others. So doe some Birds; As Cygnets; from Gray turne White; Hawkes, from Browne turne more White: And some Birds there be, that vpon their Moulting, doe turne Colour; As Robin-Redbrests, after their Moulting, grow to be Red againe, by degrees; So doe Gold-Finches vpon the Head. The Cause is, for that Moisture doth (chiefly) colour Haire, and Feathers; And Drinesse turneth them Gray and White; Now Haire in Age waxeth Drier: So doe Feathers. As for Feathers, after Moulting, they are Young Feathers, and so all one as the Feathers of Young Birds. So the Beard is younger than the Haire of the Head, and doth (for the most part,) wax Hoare later. Out of this Ground, a Man may deuise the Meanes of Altering the Colour of Birds, and the Retardation of Heare-Haires. But of this see the fifth Experiment.

The Difference betweene Male and Female, in some Creatures, is not to be discerned, otherwise than in the Parts of Generation: As in Horses and Mares, Dogs and Bitches, Doues He and She, and others. But some differ in Magnitude, and that diuersly; For in most the Male is the greater; As in Man, Pheasants, Peacocks, Turkey's; and the like: And in some few, as in Hawkes, the Female. Some differ in the Haire, and Feathers, both in the Quantitie, Crispation, and Colours of them; As HeLions are Mi-sute, and haue great Maines; The She's are smooth like Cats. Bulls are more Crispe vpon the Fore-head than Cowes; The Peacocke, and Pheasant-Cocke, and Gold-Finch-Cocke, haue glorious and fine Colours; The Henn's haue not. Generally, the Hees in Birds haue the fairest Feathers. Some differ in diuers Features; As Bucks haue Hornes, Doe's none; Rammes haue more wreathed Hornes than Ewes; Cocks haue great Combes and Spurres, Henns little or none; Boares haue great Fangs, Sowes much lesse; The

TurkyCocke hath great and Swelling Gills, the Hen hath lesse; Men haue generally Deeper and Stronger Voices than Women. Some differ in Facultie; As the Cocks amongst Singing Birds, are the best Singers. The Chiefe Cause of all these, (no doubt,) is, for that the Males haue more Strength of Heat than the Females; Which appeareth manifestly in this, that all young Creatures Males, are like Females; And so are Eunuchs, and Gelt Creatures of all kinds, liker Females. Now Heat causeth Greatnesse of Growth, generally, where there is Moisture enough to worke vpon: But if there be found in any Creature, (which is seene rarely,) an Ouer-great Heat in proportion to the Moisture, in them the Female is the greater; As in Hawkes, and Sparrowes. And if the Heat be ballanced with the Moisture, then there is no Difference to be seene betweene Male and Female: As in the Instances of Horses, and Dogs. Wee see also, that the Hornes of Oxen, and Cowes, for the most part, are Larger than the Bulls; which is caused by abundance of Moisture, which in the Hornes of the Bull faileth-Againe, Heat causeth Pilosuy, and Crispation; And so likewise Beards in Men. It also expelleth finer Moisture which Want of Heat cannot Expell: And that is the Cause of the Beauty and Variety of Feathers: Againe, Heat doth put forth many Excreseences, and much Solide Matter, which Want of Heat cannot do: And this is the Cause of Hornes, and of the Greatnesse of them; And of the Greatnesse of the Combes and Spurres of Cocks, Gills of TurkyCocks, and Fangs of Boares. Heat also dilateth the Pipes, and Organs, which causeth the Deepnesse of the Voice. Againe, Heat refineth the Spirits, and that causeth the Cock-Singing Bird, to Excell the Hen.

There be Fishes greater than any Beasts; As the Whale is farre greater than the Elephant. And Beasts are (generally) greater than Birds. For Fishes, the Cause may be, that because they Liue not in the Aire, they haue not their Moisture drawne and Soaked by the Aire, and Sun-Beames. Also they rest alwaies, in a manner, and are supported by the Water, whereas Motion and Labour doe consuine. As for the Greatnesse of Beasts, more than of Birds, it is caused, for that Beasts stay Longer time in the Wombe, than Birds, and there Nourish, and Grow; Whereas in Birds, after the Egge Lay'd, there is no further

Growth, or Nourishment from the Female: For the Sitting doth Vinifie, and not Nourish.

We haue partly touched before the Meanes of Producing Fruits, without Coares, or Stones. And this we adde further, that the Cause must be Abundance of Moisture; For that the Coare, and Stone are made of a Dry Sap-. And we see that it is possible, to make a Tree put forth onely in Blossome, without Fruit; As in Cherries with Double Flowers; Much more into Fruit without Stone, or Coares. It is reported, that a Cions of an Apple, grafted vpon a Colo — Stalke, sendeth forth a great Apple without a Coare. It is not vnlikely, that if the Inward Pith of a Tree, were taken out, so that the Iuyce came onely by the Barke, it would worke the Effect. For it hath beene obserued, that in Pollards, if the Water get in on the Top, and they become Hollow, they put forth the more. We adde also, that it is deliuered for certaine by some, that if the Cions be grafted, the Small End downwards, it will make Fruit haue little or no Coares, and Stones.

Tobacco is a thing of great Price, if it be in request; For an — of it will be worth, (as is affirmed,) two Hundred Pounds, by the yeare, towards Charge. The Charge of making the Ground and otherwise, is great, but nothing to the Profit. But the English Tobacco, hath small credit, as being too Dull, and Eartby, Nay the —— Tobacco; though that be in a Hotter Climate, can get no credit, for the same — that a Triall to make Tobacco more Aromaticall, and better Concocted here in England, were a Thing of great profit. Some haue gone about to doe it by Drenching the English Tobacco, in a Decoction or Infusion of Indian Tobacco: But those are but Sophistications, and Toyes; For Nothing that is once Perfect, and hath run his Race, can receiue much Amendment. You must euer resort to the Beginnings of Things for Melioration. The Way of Maturation of Tobacco must, as in other Plants, be, from the Heat, Either of the Earth, or of the Sunne: We see some Leading of this in Musk-Melons; which are sowen vpon a Hot Bed, Dunged below, vpon a Bancke turned vpon the South Sunne, to giue Heat by Reflexion; Laid vpon Tiles, which increaseth the Heat, And Couered with Straw to keepe them from Cold. They remoue them also, which addeth some Life: And by these Helpes they become as good in England, as in Italy, or

Prouence. These, and the like Meanes, may be tried in Tobacco. Enquire also of the Steeping of the Roots, in some such Liquour, as may giue them Vigour to put forth Strong.

Heat of the Sunne, for the Maturation of Fruits; Yea and the Heat of Viuification of Liuing Creatures; are both represented and supplied, by the Heat of Fire; And likewise, the Heats of the Sunne, and Life, are represented one by the other.Trees, set vpon the Backes of Chimneyes, doe ripen Fruit sooner. Vines, that haue beene drawne in at the Window of a Kitchen, haue sent forth Grapes ripe a Month (at least) before others. Stoues, at the Backe of Walls, bring forth Orenges here with vs. Egges, as is reported by some, haue beene hatched in the warmth of an Ouen. It is reported by the Ancients, that the Estrich Layeth her Egs vnder Sand, where the Heat of the Sunne disclosed them.

Barley in the Boyling swelleth not much; Wheat swelleth more; Rize extremely; In so much as a Quarter of a Pint (vnboyled) will arise to a Pint boyled. The Cause (no doubt) is, for that the more Close and Compact the Body is, the more it will dilate: Now Barley is the most Hollow; Wheat more Solide than that; and Rize most Solide of all. It may be also that some Bodies haue a Kinde of Lentour, and more Depertible Nature than others; As we see it Euident in Colouration; For a Small Quantity of Saffron, will Tinct more, than a very great Quantity of Bresill, or Wine.

Fruit groweth Sweet by Rowling, or Pressing them gently with the Hand; As Rowling-Peares, Damasins, &c. By Rottennesse; As Medlars, Seruickes, Sloe's, Heps, &c. By Time; As Apples, Wardens, Pomgranats, &c. By certaine Speciall Maturations; As by Laying them in Hay, Straw, &c. And by Fire; As in Roasting, Stewing, Baking, &c. The Cause of the Sweetnesse by Rowling, and Pressing, is Emollition, which they properly enduce; As in Beating of Stock-Fish, Flesh, &c. By Rottennesse is, for that the Spirits of the Fruit, by Putrefaction, gather Heat, and thereby disgest the Harder Part: For in all Putrefactions, there is a Degree of Heat. By Time and Keeping is, because the Spirits of the Body, doe euer feed vpon the Tangible Parts, and attenuate them. By Seuerall Maturations is, by some Degree of Heat. And by Fire is, because it

is the Proper Worke of Heat to Refine, and to Incorporate; And all Sourenesse consisteth in some Grossenesse of the Body: And all Incorporation doth make the Mixture of the Body, more Equall, in all the Parts; Which euer induceth a Milder Taste.

Of Fleshes, some are Edible; Some, except it be in Famine, not. For those that are not Edible, the Cause is, for that they haue (commonly) too much Bitternesse of Taste; And therefore those Creatures, which are Fierce and Cholerick, are not Edible; As Lions, Wolnes, Squirrells, Dogs, Foxes, Horses, &c. As for Kine, Sheepe, Goats, Deere, Swine, Conneyes, Hares, &c. We see they are Milde, and Fearefull. Yet it is true, that Horses, which are Beasts of Courage, haue beene, and are eaten by some Nations; As the Scythians were called Hippophagi; And the Chineses eat Horse-flesh at this day; And some Gluttons haue vsed to haue Colts-flesh baked. In Birds, such as are Carniuor a, and Birds of Prey, are commonly no Good Meat; But the Reason is, rather the Cholerick Nature of those Birds, than their Feeding vpon Flesh; For Puits, Gulls, Shouelers, Duckes, doe feed vpon Flesh, and yet are Good Meat: And wee see, that those Birds, which are of Prey, or feed vpon Flesh, are good Meat, when they are very Young; As Hawkes, Rookes out of the Neast, Owles, &c. Mans Flesh is not Eaten. The Reasons are Three: First, because Men in Humanity doe abhorre it: Secondly, because no Liuing Creature, that Dyeth of it selfe, is good to Eat: And therefore the Ca — (themselues) eat no Mans-flesh, of those that Dye of Themselues, but of such as are Slaine. The Third is, because there must be (generally) some Disparity, between the Nourishment, and the Body Nourished; And they must not be Ouer-neere, or like: Yet we see, that in great Weaknesses, and Consumptions, Man haue beene sustained with Womans Milke: And Ficinus fondly (as I conceiue) aduiseth, for the Prolongation of Life, that a Veine be opened in the Arme of some wholesome Young Man; And the Bloud to be sucked. It is said, that Witches doe greedily eat Mens flesh; which if it be true, besides a Diuellish Appetite in them, it is likely to proceed, for that Mans flesh may send vp High and Pleasing Vapours, which may stirre the Imagination; And Witches Felicity is chiefly in Imagination, as hath beene said.

There is an Ancient Receiued Tradition of the Salamander, that it liueth in the Fire, and hath force also to extinguish the Fire. It must haue two Things, if it be true, to this Operation: The One a very Close Skin, whereby Flame, which in the Midst is not so hot, cannot enter: For we see that if the Palme of the Hand be annointed thicke with White of Egge, and then Aquanita be poured vpon it, and Enflamed, yet one may endure the Flame a pretty while. The other is some Extreme Cold and Quenching vertue, in the Body of that Creature, which choaketh the Fire. We see that Milke quencheth Wilde-Fire, better than Water, because it entreth better.

Time doth change Fruit, (as Apples, Peares, Pomgranats, &c.) from more Soure, to more Sweet: But contrariwise Liquours, (euen those that are of the Iuyce of Fruit,) from more Sweet to more Soure; As Wort, Must, New Veriuyce, &c. The Cause is, the Congregation of the Spirits together: For in both Kindes, the Spirit is attenuated by Time; But in the first Kinde, it is more Diffused, and more Mastered by the Grosser Parts, which the Spirits doe but disgest: But in Drinkes the Spirits doe raigne, and finding lesse Opposition of the Parts, become themselues more Strong; Which causeth also more Strength in the Liquour; Such, as if the Spirits be of the Hotter Sort, the Liquour becommeth apt to Burne; But in Time, it causeth likewise, when the Higher Spirits are Euapourated, more Sourenesse.

It hath beene obserued by the Ancients, that Plates of Metall, and especially of Brasse, applied presently to a Blow, will keepe it downe from Swelling. The Cause is Repercussion, without Humectation, or Entrance of any Body: for the Plate hath onely a Virtuall Cold, which doth not search into the Hurt; Whereas all Plasters, and Ointments doe enter. Surely, the Cause, that Blowes and Bruises enduce Swellings, is, for that the Spirits resorting to Succour the Part that Laboureth, draw also the Humours with them: For we see, that it is not the Repulse, and the Returne of the Humour in the Part Strucken, that causeth it; For that Gouts, and Tooth-Aches cause Swelling, where there is no Percussion at all.

The Nature of the Orris Root, is almost Singular; For there be few Odoriferous Roots; And in those that are, in any degree, Sweet, it is but the same

Sweetnesse with the Wood, or Leafe: But the Orris is not Sweet in the Leafe; Neither is the Flower any thing so Sweet as the Root. The Root seemeth to haue a Tender dainty Heat; Which when it commeth aboue Ground, to the Sunne, and the Aire, vanisheth: For it is a great Mollifier; And hath a Smell like a Violet.

It hath been obserued by the Ancients, that a great Vessell full, drawne into Bottles; And then the Liquour put againe into the Vessell; will not fill the Vessell againe, so full as it was, but that it may take in more Liquour: And that this holdeth more in Wine, than in Water. The Cause may be Triuiall; Namely, by the Expence of the Liquour, in regard some may sticke to the Sides of the Bottles: But there may be a Cause more Subtill; Which is, that the Liquour in the Vessell, is not so much Compressed, as in the Bottle; Because in the Vessell, the Liquour meeteth with Liquour chiefly; But in the Bottles a Small Quantity of Liquour, meeteth with the Sides of the Bottles, which Compresse it so, that it doth not Open againe.

Water, being contiguous with Aire, Cooleth it, but Moisteneth it not, except it Vapour. The Cause is, for that Heat, and Cold haue a Virtuall Transition, without Communication of Substance; but Moisture not: And to all Madefaction there is required an Imbibition: But where the Bodies are of such seuerall Leuity, and Grauity, as they Mingle not, there can follow no Imbibition. And therefore, Oyle likewise lyeth at the Top of the Water, without Commixture: And a Drop of Water, running swiftly ouer a Straw, or Smooth Body, wetteth not.

Starre-light Nights, yea and bright Moone-shine Nights, are Colder than Cloudy Nights. The Cause is, the Drinesse and Finenesse of the Aire, which thereby becommeth more Piercing, and Sharpe? And therefore Great Continents are colder than Islands: And as for the Moone, though it selfe inclineth the Aire to Moisture, yet when it shineth bright, it argueth the Aire is dry. Also Close Aire is warmer than Open Aire; which (it may be) is, for that the true Cause of Cold, is an Expiration from the Globe of the Earth, which in open Places is stronger; And againe, Aire it selfe, if it be not altered by that Expiration, is not without some Secret Degree of Heat: As it is not likewise without some Secret Degree of Light: For otherwise Cats, and Owles, could not see in the Night; But

that Aire hath a little Light. Proportionable to the Visuall Spirits of those Creatures.

The Eyes doe moue —— — way; For when one Eye moueth to the Nosthrill, the other moueth from the Nosthrill. The Cause is Motion of Consent, which in the Spirits, and Parts Spirituall, is Strong. But yet Vse will induce the Contrary: For some can Squint, when they will: And the Common Tradition is, that if Children be set vpon a Table, with a Candle behinde them, both Eyes will moue Outwards; As affecting to see the Light, and so induce Squinting.

We see more exquisitely with One Eye Shut, than with Both Open. The Cause is, for that the Spirits Visuall vnite themselues more, and so become Stronger. For you may see, by looking in a Glasse, that when you shut one Eye, the Pupill of the other Eye, that is Open, Dilateth.

The Eyes, if the Sight meet not in one Angle, See Things Double. The Cause is, for that Seeing two Things, and Seeing one Thing twice, worketh the same Effect: And therefore a little Pellet, held betweene two Fingers, laid a-crosse, seemeth Double.

Poreblinde Men, see best in the Dimmer Lights; And likewise haue their Sight Stronger neare hand, than those that are not Poreblinde; And can Reade and Write smaller Letters. The Cause is, for that the Spirits Visuall, in those that are Poreblinde, are Thinner, and Rarer, than in others; And therefore the Greater Light disperseth them. For the same Cause they need Contracting; But being Contracted, are more strong, than the Visuall Spirits of Ordinary Eyes are; As when we see thorow a Leuell, the Sight is the Stronger: And so is it, when you gather the Eyelids somewhat close: And it is commonly seene in those that are Poreblinde, that they doe much gather the Eyelids together. But Old Men, when they would see to Reade, put the Paper somewhat a farre off. The Cause is, for that Old Mens Spirits Visuall, contrary to those of Poreblinde Men, vnite not, but when the Obiect is at some good distance, from their Eyes.

Men see better, when their Eyes are ouer-against the Sunne, or a Candle, if they put their Hand a little before their Eye. The Reason is, for that the Glaring of the Sunne, or the Candle, doth weaken the Eye; wheras the Light Circumfused

is enough for the Perception. For we see, that an Ouerlight maketh the Eyes Dazell; Insomuch as Perpetuall Looking against the Sunne, would Cause Blindnesse. Againe, if Men come out of a Great Light, into a Darke Roome; And contrariwise, if they come out of a Darke Roome, into a Light Roome, they seeme to haue a Mist before their Eyes, and see worse, than they shall doe, after they haue stayed a little while, either in the Light, or in the Darke. The Cause is, for that the Spirits Visuall, are vpon a Sudden Change, disturbed, and put out of Order; And till they be recollected, doe not performe their Function well. For when they are much Dilated by Light, they cannot Contract suddenly; And when they are much Contracted by Darknesse, they cannot Dilate suddenly. And Excesse of both these, (that is, of the Dilatation, and Contraction of the Spirits Visuall,) if it belong, Destroyeth the Eye. For as long Looking against the Sunne, or Fire, hurteth the Eye by Dilatation; So Curious Painting in Small Volumes, and Reading of Small Letters, doe hurt the Eye by Contraction.

It hath beene obserued, that in Anger, the Eyes wax Red; And in Blushing, not the Eyes, but the Eares, and the Parts behinde them. The Cause is, for that in Anger, the Spirits ascend and wax Eager; Which is most easily seene in the Eyes, because they are Translucide; Though withall it maketh both the Cheekes, and the Gills Red; But in Blushing, it is true, the Spirits ascend likewise to Succour, both the Eyes, and the Face, which are the Parts that labour: But then they are repulsed by the Eyes, for that the Eyes, in Shame doe put backe the Spirits, that ascend to them, as vnwilling to looke abroad: For no Men, in that Passion, doth looke strongly, but Deiectedly; And that Repulsion from the Eyes, Diuerteth the Spirits and Heat more to the Eares, and the Parts by them.

The Obiects of the Sight, may cause a great Pleasure and Delight in the Spirits, but no Paine, or great Offence; Except it be by Memory, as hath beene said. The Glimpses and Beames of Diamonds that strike the Eye; Indian Feathers, that haue glorious Colours; The Comming into a Faire Garden; The Comming into a Faire Roome richly furnished; A Beautifull Person; And the like; doe delight and exhilarate the Spirits much. The Reason, why it holdeth not in the Offence, is, for that the Sight is the most Spirituall of the Senses; whereby

it hath no Obiect Grosse enough to offend it. But the Cause (chiefly) is, for that there be no Actiue Obiects to offend the Eye. For Harmonicall Sounds, and Discordant Sounds, are both Actiue, and Positiue: So are Sweet Smels, and Stinks: So are Bitter, and Sweet, in Tastes: So are Ouer-Hot, and Ouer-Cold, in Touch: But Blacknesse, and Darknesse, are indeed but Priuatiues; And therefore haue little or no Actiuitie. Somewhat they doe Contristate, but very little.

Water of the Sea, or otherwise, looketh Blacker when it is moued, and Whiter when it resteth. The Cause is, for that by meanes of the Motion, the Beames of light passe not Straight, and therefore must be darkened, whereas, when it resteth, the Beames doe passe Straight. Besides, Splendour hath a Degree of Whitenesse; Especially if there be a little Repercussion: For a Looking-Glasse with the Steele behinde, looketh Whiter, than Glasse Simple. This Experiment deserueth to be driuen further, in Trying by what Meanes Motion may hinder Sight.

Shell-Fish haue beene, by some of the Ancients, compared and sorted with the Insecta; But I see no reason why they should; For they haue Male, and Female, as other Fish haue: Neither are they bred of Putrefaction; Especially such as doe Moue. Neuerthelesse it is certaine, that Oisters, and Cockles, and Mussles, which Moue not, haue no discriminate Sex: Quare in what time, and how they are bred? It seemeth that Shells of Oisters are bred where none were before; A tried, that the great Horse-Mussle, with the fine shell, that breedeth in Ponds, hath bred within thirty yeares: But then, which is strange, it hath beene tried, that they doe not only Gape, and Shut, as the Oisters doe, but Remone from one Place to Another.

The Senses are alike Strong, both on the Right Side, and on the Left; But the Limmes on the Right Side are Stronger. The Cause may be, for that the Braine, which is the Instrument of Sense, is alike on both Sides; But Motion, and Habilities of Mouing, are somewhat holpen from the Liner, which lieth on the Right Side. It may be also, for that the Senses are put in Exercise, indifferently, on both Sides, from the Time of our Birth; But the Limmes are vsed most on the

Right Side, whereby Custome helpeth; For wee see that some are Left-Handed: Which are such, as haue vsed the Left-Hand most.

Frictions make the Parts more Fleshie, and Full: As wee see both in Men; And in Carrying of Horses, &c. The Cause is, for that they draw greater Quantitie of Spirits and Blond to the Parts: And againe, because they draw the Aliment more forcibly from within: And againe, because they relax the Pores, and so make better Passage for the Spirits, Blond, and Aliment: Lastly, because they dissipate and disgest any Inutile or Excrementitious Moisture, which lieth in the Flesh: All which helpe Assimilation. Frictions also doe more F-ll, and Impinguate the Body, than Exercise. The Cause is, for that in Frictions, the Inward Parts are at rest; Which in Exercise are beaten (many times) too much: And for the same Reason, (as we haue noted heretofore,) Gally-Slaues are Fat and Fleshie, because they stirre the Limmes more, and the Inward Parts lesse.

All Globes afarre off appeare Flat. The Cause is, for that Distance, being a Secundary Obiect of Sight, is not otherwise discerned, than by more or lesse Light; which Disparitie when it cannot be discerned, all seemeth One: As it is (generally) in Obiects not distinctly discerned; For so Letters, if they be so farre off, as they cannot be discerned, shew but as a Duskish Paper: And all Engrauings, and Embossings, (afarre off) appeare Plaine.

The Vtmost Parts of Shadowes seeme euer to Tremble. The Cause is, for that the little Moats, which wee see in the Sunne, doe euer Stirre, though there be no Wind; And therefore those Mouing, in the Meeting of the Light and the Shadow, from the Light to the Shadow, and from the Shadow to the Light, doe shew the Shadow to Moue, because the Medium Moueth.

Shallow, and Narrow Seas, Breake more than Deepe, and Large. The Cause is, for that the Impulsion being the same in Both; Where there is great Quantitie of — , and likewise Space Enough; there the Water Rowleth, and Moueth, both more Slowly, and with a Sloper Rise, and Fall: But where there is lesse Water, and lesse Space, and the Water dasheth more against the Bottome; there it moueth more Swiftly, and more in Precipice; For in the Breaking of the Wanes there is euer a Precipice.

It hath beene obserued by the Ancients, that SaltWater Boyled, or Boyled and Cooled againe, is more Potable, than of it selfe Raw: And yet the Taste of Salt, in Distillations by Fire, riseth not; For the Distilled Water will be Fresh. The Cause may be, for that the Salt Part of the Water, doth partly rise into a Kinde of Scumme on the Top; And partly goeth into a Sediment in the Bottome: And so is rather a Separation, than an Euaporation. But it is too grosse to rise into a Vapour: And so is a Bitter Taste likewise; For Simple Distilled Waters, of Wormewood, and the like, are not Bitter.

It hath beene set downe before, that Pits vpon the Sea-Shoare, turne into Fresh Water, by Percolation of the Salt through the Sand: But it is further noted, by some of the Ancients, that in some Places of Affricke, after a time, the Water in such Pits will become Brackish againe. The Cause is, for that after a time, the very Sands, thorow which the SaltWater passeth, become Salt; And so the Strainer it selfe is tincted with Salt. The Remedie therefore is, to digge still New Pits, when the old wax Brackish; As if you would change your Strainer.

It hath beene obserued by the Ancients, that Salt Water, will dissolue Salt put into it, in lesse time, than Fresh Water will dissolue it. The Cause may be, for that the Salt in the Precedent Water, doth, by Similitude of Substance, draw the Salt new put in, vnto it; Whereby it diffuseth in the Liquour more speedily. This is a Noble Experiment, if it be true; For it sheweth Meanes of more Quicke and Easie Infusions; And it is likewise a good Instance of Attraction, by Similitude of Substance. Trie it with Sugar put into Water, formerly Sugred; And into other Water Vnsugred.

Put Sugar into Wine, part of it aboue, part vnder the Wine; And you shall finde, (that which may seeme strange,) that the Sugar aboue the Wine, will soften and dissolue sooner, than that within the Wine. The Cause is, for that the Wine entreth that Part of the Sugar, which is vnder the Wine, by Simple Infusion, or Spreading; But that Part aboue the Wine, is likewise forced by Sacking: For all Spungie Bodies expell the Aire, and draw in Liquour, if it be Contiguous: As wee see it also in Spunges, put part aboue the Water. It is worthy

the Inquiry, to see how you may make more Accurate Infusions, by Helpe of Attraction.

Water in Wells is warmer in Winter, than in Summer: And so Aire in Caues. The Cause is, for that in the Hither Parts, vnder the Earth, there is a Degree of some Heat; (As appeareth in Sulphureous Veines, &c.) Which shur close in, (as in Winter,) is the More; But if it Peripire, (as it doth in Summer,) it is the Lesse.

It is reported, that amongst the Leucadians, in Ancient time, vpon a Superstition, they did vse to Precipitate a Man, from a High Cliffe into the Sea; Tying about him, with Strings, at some distance, many great Fowles; And fixing vnto his Body diuers Feathers, spred, to breake the Fast. Certainly many Birds of good Wing, (As Kites, and the like,) would beare vp a good Weight, as they file; And Spreading of Feathers, thinne, and close, and in great Bredth, will likewise beare vp a great Weight; Being euen laid, without Tilting vpon the Sides. The further Extension of this Experiment for Flying may be thought vpon.

There is, in some Places, (namely in Cephalonia,) a little Shrub, which they call Holy-Oake, or Dwarfe-Oake: Vpon the Leaues whereof there riseth a Tumour, like a Blister; Which they gather, and rub out of it, a certaine Red Dust, that conuerteth (after a while) into Wormes, which they kill with Wine, (as is reported,) when they begin to Quicken: With this Dust they die Scarlet.

In Zant, it is very ordinary, to make Men Impotent, to accompany with their Wines. The like is Practised in Gasconie; Where it is called Nouër l' eguillette. It is practised alwayes vpon the Wedding Day. And in Zant, the Mothers themselues doe it, by way of Preuention; Because thereby they hinder other Charmes, and can vndoe their Owne. It is a Thing the Ciuill Law taketh knowledge of; And therefore is of no Light Regard.

It is a Common Experiment, but the Cause is mistaken. Take a Pot, (Or better a Glasse, because therein you may see the Motion,) And set a Candle lighted in the Bottome of a Basen of Water; And turne the Mouth of the Pot, or Glasse, ouer the Candle, and it will make the Water rise. They ascribe it, to the Drawing of Heat; Which is not true: For it appeareth plainly to be but a Motion of Nexe, which they call Ne detur vacuum; And it proceedeth thus. The Flame of the

Candle, as soone as it is couered, being suffocated by the Close Aire, lesseneth by little and little: During which time, there is some little Ascent of Water, but not much: For the Flame Occupying lesse and lesse Roome, as it lesseneth, the Water succeedeth. But vpon the Instant of the Candles Going out, there is a sudden Rise, of a great deale of Water; For that the Body of the Flame filleth no more Place; And so the Aire, and the Water succeed. It worketh the same Effect, if in stead of Water, you put Flower, or Sand, into the Basen: Which sheweth, that it is not the Flames Drawing the Liquour, as Nourishment; As it is supposed; For all Bodies are alike vnto it; As it is euer in Motion of Nexe; Insomuch as I haue seene the Glasse, being held by the Hand, hath lifted vp the Basen, and all: The Motion of Nexe did so Claspe the Bottome of the Basen. That Experiment, when the Basen was lifted vp, was made with Oyle, and not with Water; Neuerthelesse this is true, that at the very first Setting of the Mouth of the Glasse, vpon the Bottome of the Basen, it draweth vp the Water a little, and then standeth at a Stay, almost till the Candles Going out, as was said. This may shew some Attraction at first: But of this we will speake more, when we handle Attractions by Heat.

Of the Power of the Gelestiall Bodies, and what more Secret Influences they haue, besides the two Manifest Influences of Heat, and Light, We shall speake, when we handle Experiments touching the Celestiall Bodies: Meane-while, wee will giue some Directions for more certaine Trials, of the Vertue and Influences of the Moone; which is our Nearest Neighbour.

The Influences of the Moone, (most obserued,) are Foure. The Drawing forth of Heat: The Inducing of Putrefaction: The Increase of Moisture: The Exciting of the Motions of Spirits.

For the Drawing forth of Heat, we haue formerly prescribed, to take Water Warme, and to set Part of it against the Moone-Beames, and Part of it with a Skreene betweene; And to see whether that which standeth Exposed to the Beames, will not Coole sooner. But because this is but a Small Interposition, (though in the Sunne wee see a Small Shade doth much,) it were good to try it, when the Moone shineth, and when the Moone shineth not at all; And with

Water Warme in a Glasse-Bottle, as well as in a Dish; And with C — rs; And with Iron Red-Hot; &c.

For the In — ing of Putrefaction, it were good to try it with Flesh, or Fish, Exposed to the Moone-Beames; And againe Exposed to the Aire, when the Moone shineth not, for the like time; To see whether will corrupt sooner: And try it also with Capon, or some other Fowle, laid abroad, to see whether it will mortifie, and become tender sooner? Try it also with Dead Flies, or Dead Wormes, hauing a little Water cast vpon them, to see whether will Putrifie sooner. Try it also with an Apple, or Orenge, hauing Holes made in their Tops, to see whether will Rot or Mould sooner-Try it also with Holland-Cheese, hauing Wine put into it, whether will breed Mites sooner, or greater?

For the Increase of Moisture, the Opinion Receiued is; That Seeds will grow soonest; And Haire, and Nailes, and Hedges, and Herbs, Cut, &c. will grow soonest, if they be Set, or Cut, in the Increase of the Moone. Also that Braines in Rabits, Woodcocks, Calues, &c. are fullest in the Full of the Moone: And so of — in the Bones; And so of Oysters, and — , which of all the rest are the easiest tried, if you haue them in Pits.

Take some —— —— and set some of them immediately after the Change; And others of the same kinde immediately after the Full: Let them be as Like as can be: The Earth also the Same as neare as may be; And therefore beft in Pots: Let the Pots also stand, where no Raine, or Sunne may come to them, lest the Difference of the Weather confound the Experiment: And then see in what Time, the Seeds Set in the Increase of the Moone, come to a certaine Height; And how they differ from chose that are Set in the Decrease of the Moone.

It is like, that the Braine of Man waxeth Moister, and Fuller, vpon the Full of the Moone: And therefore it were good for those that haue Moist Braines, and are great Drinkers, to take Fume of Lignum Aloës, RoseMary —— about the full of the Moone. It is like also, that the — in mens Bodies, Increase, and Decrease, as the Moone doth; And therefore it were good to Purge, some day, or two, after the Full; For that then the — will not replenish so soone againe.

As for the — of the Motion of the Spirits, you must note that the Growth of Hedges, Herbs, Haire, — is caused from the Moone, by — of the Spirits, as well as by Increase of the Moisture. But for Spirite in particular, the great Instante is in — .

There may be other Secret Effects of the Influence of the Moone, which are not yet brought into Obseruation. It may be, that if it so fill out, that the Wind be North, or North-East, in the Full of the Moone, it increaseth Cold; And if South, or South-West, it disposeth the Aire, for a good while, to Warmth, and Raine; Which would be obserued.

It may be, that Children, and Young Cattell, that are Brought forth in the Full of the Moone, are stronger, & larger, than those that are brought forth in the Wane: And those also which are Begotten in the Full of the Moone: So that it might be good Husbandry, to put Rams, and Bulls to their Females, somewhat before the Full of the Moone. It may be also, that the Egs lay'd in the Full of the Moone, breed the better Bird: And a Number of the like Effects, which may be brought into Obseruation: Quare also, whether great Thunders, and Earth-Quakes, be not most in the Full of the Moone?

The Turning of Wine to Vinegar, is a Kinde of Putrefaction: And in Making of Vinegar, they vse to set Vessels of Wine ouer against the Noone-Sunne; which calleth out the more Oyly Spirits, and leaueth the Liquour more Soure, and Hard. We see also, that Burnt-Wine is more Hard, and Astringent, than Wine Vnburnt. It is said, that Cider in Nauigations vnder the Line ripeneth, when Wine or Beere soureth. It were good to set a Rundlet of Veriuyce ouer against the Sunne, in Summer, as they doe Vinegar, to see whether it will Ripen, and Sweeten.

There be diuers Creatures, that Sleepe all Winter; As the Beare, the Hedge-hog, the Bat, the Bee, &c. These all wax Fat when they Sleepe, and egest not. The Cause of their Fattening, during their Sleeping time, may be the Want of Assimilating, For whatsoeuer Attimilation not to Flesh, turneth either to Sweat, or Fat. These Creatures, for part of their Sleeping Time, haue been obserued not to Stirre at all; And for the other part, to Stirre, but not to Remoue. And they get

Warme and Close Places to Sleepe in. When the Flemmings Wintred in Noua Zembla, the Beares, about the Middle of Nouember, went to Sleepe; And then the Foxes began to come forth, which durst not before. It is noted by some of the Ancients, that the Shee-Beare breedeth, and lyeth in with her Young, during that time of Rest: And that a Beare, Big with Young, hath seldome beene seene.

Some Liuing Creatures are Procreated by Copulation betweene Male, and Female: Some by Putrefaction; And of those which come by Putrefaction, many doe (neuerthelesse) afterwards procreate by Copulation. For the Cause of both Generations: First, it is most certaine, that the Cause of all Viuification, is a Gentle and Proportionable Heat, working vpon a Glutinous and Yeelding Substance: For the Heat doth bring forth Spirit in that Substance: And the Substance, being Glutinous, produceth Two Effects: The One, that the Spirit is Detained, and cannot Breake forth: The Other, that the Matter being Gentle, and Yeelding, is driuen forwards by the Motion of the Spirits, after some Swelling into Shape, and Members. Therefore all Sperme, all Menstruous Substance, all Matter whereof Creatures are produced by Putrefaction, haue euermore a Closenesse, Lentour, and Sequacity. It seemeth therefore, that the Generation by Sperme onely, and by Putrefaction, haue two Different Causes. The First is, for that Creatures, which haue a Definite and Exact Shape, (as those haue which are Procreated by Copulation,) cannot be produced by a Weake, and Casuall Heat; Nor out of Matter, which is not exactly Prepared, according to the Species. The Second is, for that there is a greater Time required, for Maturation of Perfect Creatures; For if the Time required in Viuification be of any length, then the Spirit will Exhale, before the Creature be Mature: Except it be Enclosed in a Place where it may haue Continuance of the Heat, Accesse of some Nourishment to maintaine it, and Closenesse that may keepe it from Exhaling. And such Places are the Wombes, and Matrices, of the Females. And therefore all Creatures, made of Putrefaction, are of more Vncertaine Shape; And are made in Shorter Time; And need not so Perfect an Enclosure, though some Closenesse be commonly required. As for the Heathen Opinion, which was, that vpon great Mutations of the World, Perfect Creatures were first Engendred of Concretion;

As well as Frogs, and Wormes, and Flies, and such like, are now; Wee know it to be vaine: But if any such Thing should be admitted, Discoursing according to Sense, it cannot be, except you admit a Chaos first, & Commixture of Heauen, and Earth. For the Frame of the World, once in Order, cannot effect it by any Extesse, or Casualtie.

X. Century.

THe Philosophie of Pythagoras, (which was full of Superstition,) did first plant a Monstrous Imagination, Which afterwards was, by the Schoole of Plato, and Others, Warred, and Nourished. It was, that the World was One, Entire, Perfect, Liuing Creature; Insomuch as Apolloni-of Tya-a, a Pythagorean Prophet, affirmed, that the Ebbing and Flowing of the Sea, was the Respiration of the World, drawing in Water as Breath, and putting it forth againe. They went on, and inferred; That if the World were a Liuing Creature, it had a Soule, and Spirit; Which also they ha — calling it Spiritus Mundi; The Spirit or Soule of the World: By which they did not intend God; (for they did admit of a Deitie besides;) But only the Soule, or Essentiall Forme of the Vniue-se. This Foundation being laid, they mought build vpon it, what they would; For in a Liuing Creature, though neuer so great, (As for Example, in a great Whale,) the Sense, and the Affects of any one Part of the Body, instantly make a Transcursion tho-rowout the whole Body: So that by this they did insinuate, that no Distance of Place, nor Want or Indisposition of Matter, could hinder Magicall Operations; But that, (for Example,) wee mought here in Europe, haue Sense and Feeling of that, which was done in China: And likewise, we mought worke any Effect, without, and against Matter: And this, not Holpen by the Cooperation of Angels, or Spirits, but only by the Vnitie and Harmonie of Nature. There were some also, that staid not here; but went further, and held; That if the Spirit of Man, (whom they call the Microcosme,) doe giue a fit touch to the Spirit of the World, by strong Imaginations, and Beleefes, it might command Nature; For Paracelsus, and some darksome Authors of Magicke, doe ascribe to Imagination Exalted, the Power of Miracle-working Faith. With these Vast and Bottomelesse Follies, Men haue been (in part) entertained.

But wee, that hold firme to the Works of God; And to the Sense, which is Gods Lampe; (Lucerna Dei Spiraculum Hominis;) willen quire, with all Sobrietie, and Seueritie, whether there be to be found, in the Foot-steps of

Nature, any such Transmission and Influx of Immateriate Vertues; And what the Force of Imagination is; Either vpon the Body Imaginant, or vpon another Body: Wherein it will be like that Labour of Hercules, in Purging the Stable of Augeas, to separate from Superstitious, and Magicall Arts, and Obseruations, any thing that is cleane, and pure Naturall; And not to be either Contemned, or Condemned. And although wee shall haue occasion to speake of this in more Places than One, yet we will now make some Entrance thereinto.

Men are to be Admonished, that they doe not with-draw Credit, from the Operations by Transmission of Spirits, and Force of Imagination, because the Effects faile sometimes. For as in Infection, and Contagion from Body to Body, (as the Plague, and the like,) it is most certaine, that the Infection is receiued (many times) by the Body Passiue, but yet is by the Strength, and good Disposition thereof, Repulsed, and wrought out, before it be formed into a Disease; So much more in Impressions from Minde to Minde, or from Spirit to Spirit, the Impression taketh, but is Encountred, and Ouercome, by the Minde and Spirit, which is Passiue, before it worke any manifest Effect. And therefore, they worke most vpon Weake Mindes, and Spirits: As those of Women; Sicke Persons; Superstitious, and Fearfull Persons; Children, and Young Creatures;

Nescio quis teneros Oculus mihi fascinat Agnos:

The Poet speaketh not of Sheepe, but of Lambs. As for the Weaknesse of the Power of them, vpon Kings, and Magistrates; It may be ascribed, (besides the maine, which is the Protection of God, ouer those that Execute his Place,) to the Weaknesse of the Imagination of the Imaginant: For it is hard, for a Witch, or a Sorcerer, to put on a Beleefe, that they can hurt such Persons.

Men are to be Admonished, on the other side, that they doe not easily giue Place and Credit to these Operations, because they Succeed many times; For the Cause of this Successe, is (oft) to be truly ascribed, vnto the Force of Affection and Imagination, vpon the Body Agent; And then by a Secondary Meanes, it may worke vpon a Diuers Body: As for Example; If a Man carry a Planets Seale, or a Ring, or some Part of a Beast, beleeuing strongly, that it will helpe him to obtaine his Loue; Or to keepe him from danger of hurt in Fight; Or to preuaile in

a Suit; &c. it may make him more Actiue, and Industrious; And againe, more Confident, and Persisting, than otherwise he would be. Now the great Effects that may come of Industrie, and Perseuerance, (especially in Ciuill Businesse,) who knoweth not? For wee see Audacitie doth almost binde and mare the weaker Sort of Minds; And the State of Humane Actions is so variable, that to trie Things oft, and neuer to giue ouer, doth Wonders: Therefore, it were a Meere Fallacie and Mistaking, to ascribe that to the Force of Imagination, vpon another Body, which is but the Force of Imagination vpon the Proper Body: For there is no doubt, but that Imagination, and Vehement Affection, worke greatly vpon the Body of the Imaginant: As wee shall shew in due place.

Men are to be Admonished, that as they are not to mistake the Causes of these Operations; So, much lesse, they are to mistake the Fact, or Effect; And rashly to take that for done, which is not done. And therefore, as diuers wise Indges haue prescribed, and cautioned, Men may not too rashly beleeue, the Confessions of Witches, nor yet the Enidence against them. For the Witches themselues are Imaginatiue, and beleeue oft-times, they doe that, which they doe not: And People are Credulous in that point, and ready to impute Accidents, and Naturall Operations, to Witch Craft. It is worthy the Obseruing, that both in Ancient, and Late times; (As in the Thassalian Witches, and the Meetings of Witches that haue beene recorded by so many late Confessions;) the great Wonders which they tell, of Carrying in the Aire; Transforming themselues into other Bodies; &c. are still reported to be wrought, not by Incantations, or Ceremonies; But by Ointments, and Annointing themselues all ouer. This may iustly moue a Man to thinke, that these Fables are the Effects of Imagination: For it is certaine, that Ointments doe all, (if they be laid on any thing thicke,) by Stopping of the Pores, shut in the Vapours, and send them to the Head extremely. And for the Particular Ingredients of those Magicall Ointments, it is like they are Opiate, and Soporiferous. For Annointing of the Fore-head, Necke, Feet, Back-Bone, we know is vsed for Procuring Dead Sleepes: And if any Man say, that this Effect would be better done by Inward Potions; Answer may be made, that the Medicines, which goe to the Ointments, are so strong, that if they

were vsed inwards, they would kill those that vse them: And therefore they worke Potently, though Outwards.

We will diuide the Seuerall Kindes of the Operations, by Transmission of Spirits, and Imagination; Which will giue no small Light to the Experiments that follow. All Operations by Transmission of Spirits, and Imagination haue this; That they Worke at Distance, and not at Touch; And they are these being distinguished.

The First is the Transmission or Emission, of the Thinner, and more Airy Parts of Bodies; As in Odours, and Infections; And this is, of all the rest, the most Corporeall. But you must remember withall, that there be a Number of those Emissions, both Wholesome, and Vnwholesome, that giue no Smell at all: For the Plague, many times, when it is taken, giueth no Sent at all: And there be many Good and Healthfull Aires, that doe appeare by Habitation, and other Proofes, that differ not in Smell from other Aires. And vnder this Head, you may place all Imbibitions of Aire, where the Substance is Materiall, Odour-like; Whereof some neuerthelesse are strange, and very suddenly diffused; As the Alteration, which the Aire receiueth in AEgypt, almost immediately, vpon the Rising of the Riuer of Nilus, whereof we haue spoken.

The Second is the Transmission or Emission of those Things that wee call Spirituall Species; As Visibles, and Sounds: The one whereof wee haue handled; And the other we shall handle in due place. These moue swiftly, and at great distance; But then they require a Medium well disposed; And their Transmission is easily stopped.

The Third is the Emissions, which cause Attraction of Certaine Bodies at Distance; Wherein though the Loadstone be commonly placed in the First Ranke, yet we thinke good to except it, and referre it to another Head: But the Drawing of Amber, and let, and other Electricke Bodies; And the Attraction in Gold of the Spirit of Quick-Siluer, at distance; And the Attraction of Heat at distance; And that of Fire to Naphtha; And that of some Herbs to Water, though at distance; And diuers others; We shall handle, but yet not vnder this present Title, but vnder the Title of Attraction in generall.

The Fourth is the Emission of Spirits, and Immateriate Powers and Vertues, in those Things, which worke by the Vniuersall Configuration, and Sympathy of the World; Not by Formes, or Colestiall Influxes, (as is vainly caught and receiued,) but by the Primitiue Nature of Matter, and the Seeds of Things. Of this kinde is, (as we yet suppose,) the Working of the Load-Stone, which is by Consent with the Globe of the Earth: Of this Kinde is the Motion of Grauity, which is by Consent of De-se Bodies, with the Globe of the Earth: Of this kinde is some Disposition of Bodies to Rotation, and particularly from East to West: Of which kinde we conceiue the Maine Float and Re-float of the Sea is, which is by Consent of the Vniuerse, as Part of the Diurnall Motion. These I — teriate Vertues haue this Property differing from Others; That the Diuersity of the Medium hindreth them not; But they passe through all Mediums; yet at Determinate distances. And of these we shall speake, as they are incident to seuerall Titles.

The Fifth is the Emissions of Spirits; And this is the Principall in our Intention to handle now in this Place Namely, the Operation of the Spirits of the Minde of Man, vpon other Spirits: And this is of a Double Nature: The Operations of the Affections, if they be Vehement; And the Operation of the Imagination, if it be Strong. But these two are so Conp — d, as we shall handle them together: For when an E — io-, or Am-ro — Aspect doth infect the Spirits of Another, there is Ioyned both Affection, and Imagination.

The Sixth is, the Influxes of the Hea — ly Bodies, besides those two Manifest Oues, of Heat, and Light. But these we will handle, where we handle the C-lestiall Bodies, and Motions.

The Seuenth is the Operations of Sympathy; Which the Writers of Naturall Magicke haue brought into an Art, or Precept: And it is this; That if you desire to Super-induce, any Vertue or Disposition, vpon a Person, you should take the Liuing Creature, in which that Vertue is most Emine — , and in Perfection: Of that Creature you must take the Parts, wherein that Virtue chiefly is Collecate: Againe, you must take those Parts, in the Time, and Act, when that Vertue is most in Exercise; And then you must apply it to that Part of Man, wherein that

Vertue chiefly Consisteth. As if you would Super-induce Courage and Fortitude, take a Lion, or a Coche; And take the Heart, Teeth, or Paw of the Lion; Or the Heart, or Spurre of the Cocke: Take those Parts immediately after the Lion, or the Cocke haue beene in Fight; And let them be worne, vpon a Mans Heart, or Wrest. Of these and such like Sympathies, we shall speake vnder this present Title.

The Eighth and last is, an Emission of Immateriate Vertues; Such as we are a little doubtfull to Propound; It is so predigious: But that it is so conste-ly a-ouched by many: And wee hour set it downe, as a Law to our Selues, to examine things to the Bottome; And not to receiue vpon Credit, or reiect vpon Improbabilities, vntill there hath passed a due Examination. This is, the Sympathy of Indiuiduals: For as there is a Sympathy of Species; So, (it may be) there is a Sympathy of Indiuiduals: That is, that in Things, or the Parts of Things, that haue beene once Contiguous, or Entire, there should remaine a Transmission of Vertue, from the One to the Other: As betweene the Weapon, and the Wound. Whereupon is blazed abroad the Operation of Vnguentum Teli: And so of a Peece of Lard, or Sticke of Elder, &c. that if Part of it be Consumed or Putrified, it will worke vpon the other Part Seuered. Now wee will pursue the Instances themselues.

The Plague is many times taken without Manifest Sense, as hath beene said. And they report, that where it is found, it hath a Sent, of the Smell of a Mellow Apple; And (as some say) of May-Flowers: And it is also receiued, that Smels of Flowers, that are Mellow and Lushious, are ill for the Plague; As White Lillies, Cowslips, and Hyacinths.

The Plague is not easily receiued by such, as continually are about them, that haue the Plague; As Keepers of the Sicke, and Physitians; Nor againe by such as take Antidotes, either Inward, (as Mithridate; InniperBerries; Rue, Leafe and Seed; &c.) Or Outward, (as Angelica, Zedoary, and the like, in the Mouth; Tarre, Galbanum, and the like, in Perfume;) Nor againe by Old People, and such as are of a Dry and Cold Complexion. On the other side, the Plague taketh soonest hold

of those, that come out of a Fresh Aire; And of those that are Fasting; And of Children; And it is likewise noted to goe in a Bloud, more than to a Stranger.

The most Pernicious Infection, next the Plague, is the Smell of the Iayle; When Prisoners haue beene Long, and Close, and Nastily kepti Whereof we haue had, in our time, Experience, twice or thrice; when both the Iudges that sate vpon the Iayle, and Numbers of those that attended the Businesse, or were present, Sickned vpon it, and Died. Therfore it were good wisdome, that in such Cases, the Iayle were Aired, before they be brought forth.

Out of question, if such Foule Smels be made by Art, and by the Hand, they consist chiefly of Mans Flesh, or Sweat, Putrified; For they are not those Stinckes, which the Nosthrils streight abhorre, and expell, that are most Pernicious; But such Aires, as haue some Similitude with Mans Body; And so insinuate themselues, and betray the Spirits. There may be great danger, in vsing such Compositions, in great Meetings of People, within Houses; As in Churches; At Arraignments; At Playes and Solemnities; And the like; For Poysoning of Aire is no lesse dangerous than Poysoning of Water; Which hath beene vsed by the Turkes in the Warres; And was vsed by Emanuel Commenus towards the Christians, when they passed thorow his Countrey to the Holy Land. And these Empoisonments of Aire, are the more dangerous in Meetings of People; Because the much Breath of People, doth further the Reception of the Infection: And therefore, where any such Thing is feared, it were good, those Publique Places were perfumed, before the Assemblies.

The Empoysonment of Particular Persons, by Odours, hath beene reported to be in Perfumed Gloues, or the like: And it is like, they Mingle the Poyson that is dexdly, with some Smels that are Sweet, which also maketh it the sooner receiued. Plagues also haue been raised by Annointings of the Chinckes of Doores, and the like; Nor so much by the Touch, as for that it is common for Men, when they finde any thing Wet vpon their Fingers, to put them to their Nose; Which Men therefore should take heed how they doe. The best is, that these Compositions of Infectious Aires, cannot be made without Danger of

Death, to them that make them. But then againe, they may haue some Antidotes to saue themselues, So that Men ought not to be secure of it.

There haue beene, in diuers Countries, great Plagues, by the Putrefaction, of great Swarmes of Grasse-Hoppers, and L-custs, when they haue beene dead, and cast vpon Heaps.

It hapneth oft in Mines, that there are Damps, which kill, either by Suffocation, or by the Poysonous Nature of the Minerall: And those that deale much in Refining, or other Workes about Metals, and Minerals, haue their Braines Hurt and Stupefied by the Metalline Vapours. Amongst which, it is noted, that the Spirits of Quick-Siluer, euer fly to the Skull, Teeth, or Bones; In so much as Gilders vse to haue a Peece of Gold in their Mouth, to draw the Spirits of the Quick-Siluer; Which Gold afterwards they finde to be Whintened. There are also certaine Lakes, and Pits, such as that of Anernus, that Poyson Birds, (as is said,) which fly ouer them; Or Men, that stay too long about them.

The Vapour of Char-Code, or Sea-Coale, in a Close Roome, hath killed many: And it is the more dangerous, because it commeth without any Tll Smell; But stealeth on by little and little; Enducing only a F — nesse, without any Manifest Strangling. When the Dutch-Men Wintred at Noua Zembla, and that they could gather no more Stickes, they fell to make Fire of some Sea-Coale they had, wherewith (at first) they were much refreshed; But a little after they had sit about the Fire, there grew a Generall Silence, and lothnesse to speake amongst them; And immediately after, One of the Weakest of the Company, fell downe in a Swoune; Whereupon they doubting what it was, opened their doore, to let in Aire, and so saued themselues. The Effect (no doubt) is wrought by the Inspissation of the Aire; And so of the Breath, and Spirits. The like ensueth in Roomes newly Plastered, if a Fire be made in them; Whereof no lesse Man than the Emperour Ioninianus Died.

Vide the Experiment, 803. touching the Infectious Nature of the Aire, vpon the First Showers, after long Drought.

It hath come to passe, that some Apothecaries, vpon Stamping of Coloquintida, haue beene put into a great Sk — ring, by the Vapour onely.

It hath beene a Practise, to burne a Pepper, they call Ginny-Pepper; Which hath such a strong Spirit, that it prouoketh a Continuall Sneezing, in those that are in the Roome.

It is an Ancient Tradition, that Bleare-Byes infect Sound-Eyes; And that a Menstruous Woman, looking vpon a Glasse, doth rust it. Nay they haue an Opinion, which seemeth Fabulous; That Menstruous Women, going ouer a Field, or Garden, doe Corne and Herbes good by Killing the Wormes.

The Tradition is no lesse Ancient, that the Bafiliske killeth by Aspect; And that the Wolfe, if he see a Man first, by Aspect striketh a Man hoarse.

Perfumes Conuenient doe dry and strengthen the Braine; And stay Rbeumes and Defluxions; As we finde in Fame of Rose-Mary dryed, and Lignum Aloës, and Calamus, taken at the Mouth, and Nosthrils; And no doubt there be other Perfumes, that doe moisten, and refresh; And are fit to be vsed in Burning Agues, Consumptions, and too much Wakefulnesse; Such as are, Rose-Water, Vinegar, Limon-Pills, Violets, the Leanes of Vines sprinckled with a little Rose-Water, &c.

They doe vse in Sudden Faintings, and Swonnings, to put a Handkerchiefe with Rose Water, or a Little Vinegar, to the Nose; Which gathereth together againe the Spirits, which are vpon point to resolue, and fall away.

Tobacco comforteth the Spirits, and dischargeth Wearinesse; Which it worketh partly by Opening; But chiefly by the Opiate Vertue, which condenseth the Spirits. It were good therefore to try the Taking of Fumes by Pipes, (as they doe in Tobacco,) of other Things; As well to dry, and comfort, as for other Intentions. I wish Triall be made of the Drying Fume, of Rose-Mary, and Lignum Aloës, before mentioned, in Pipe; And so of Nutmeg, and Folium Indum; &c.

The Following of the Plough, hath been approued, for Refreshing the Spirits, and Procuring Appetite: But to doe it in the Ploughing for Wheat, or Rye, is not so good; Because the Earth hath spent her Sweet Breath, in Vegetables, put forth in Summer. It is better therefore to doe it, when you sow Barley. But because Ploughing is tied to Seasons, it is best to take the Aire of the Earth, new turned

vp, by Digging with the Spade; Or Standing by him that Diggeth. Gentlewomen may doe themselues much good by kneeling vpon a Cushion, and Weeding. And these Things you may practise in the best Seasons; Which is euer the Early Spring. before the Earth putteth forth the Vegetables; And in the Sweetest Earth you can chuse. It would be done also, when the Dew is a little off the Ground, lest the Vapour be too Moist. I knew a great Man, that liued Long, who had a Cleane Clod of Earth, brought to him euery Morning, as he sate in his Bed; And he would hold his Head ouer it, a good pretty while. I Commend also, sometimes, in Digging of New Earth, to poure in some Malmesey, or Greeke Wine; That the Vapour of the Earth, and Wine together, may comfort the Spirits, the more; Prouided alwaies, it be not taken, for a Heathen Sacrifice, or Libation to the Earth.

They haue, in Physicke, Vse of Pomanders, and Knots of Powders, for Drying of Rheumes, Comforting of the Heart, Prouking of Sleepe, &c. For though those Things be not so Strong as Perfumes, yet you may haue them continually in your Hand; whereas Perfumes you can take but at Times; And besides, there be diuers Things, that breath better of themselues, than when they come to the Fire; As Nigella Romana, the Seed of Melanthium, A-o-num, &c.

There be two Things, which (inwardly vsed) doe Coole and condense the Spirits; And I wish the same to be tried outwardly in Vapours. The One is Nitre, which I would haue dissoluted in Malmesey, or GreekeWine, and so the Smell of the Wine taken; Or if you would haue it more forcible, poure of it vpon a Fire-pan, well heated, as they doe Rose-Water, and Vinegar. The other is, the Distilled Water of Wilde Poppy; which I wish to be mingled, at halfe, with Rose-Water, and so taken with some Mixture of a few Clones, in a Perfuming-Pan. The like would be done with the Distilled Water of Saffron Flowers.

Smells of Muske, and Amber, and Ciuit, are thought to further Venereous Appetite: Which they may doe by the Refreshing and Calling forth of the Spirits.

Incense, and Nidorous Smells, (such as were of Sacrifices,) were thought to Intoxicate the Braine, and to dispose Men to Deuotion: Which they may doe, by a kinde of Sadnesse, and Contristation of the Spirits: And partly also by Heating,

and Exalting them. Wee see, that amongst the Iewes, the Principall Perfume of the Sanctuary, was forbidden all Common Vses.

There be some Perfumes, prescribed by the Writers of Naturall Magicke, which procure Pleasant Dreames; And some others, (as they say,) that procure Propheticall Dreames; As the Seeds of Flax, Fleawort, &c.

It is certaine, that Odours doe, in a small Degree, Nourish; Especially the Odour of Wine: And we see Men a hungred, doe loue to smell Hot Bread. It is related, that Democritus, when he lay a dying, heard a Woman, in the House, complaine, that she should be kept from being at a Feast, and Solemnity, (which she much desired to see,) because there would be a Corps in the House; Whereupon he caused Loaues of New Bread to be sent for, and opened them; And powred a little Wine into them; And so kept himselfe aliue with the Odour of them, till the Feast was past. I knew a Gentleman, that would fast (sometimes) three or foure, yea fiue dayes, without Meat, Bread, or Drinke; But the same Man vsed to haue continually, a great Wispe of Herbes, that he smelled on: And amongst those Herbes, some Esculent Herbs of strong Sent; As Onions, Garlicke, Leekes, and the like.

They doe vse, for the Accident of the Mother, to burne Feathers, and other Things of Ill Odour: And by those Ill Smells, the Rising of the Mother is put downe.

There be Aires, which the Physitians aduise their Patients to remoue vnto, in Consumptions, or vpon Recouery of Long Sicknessess Which (commonly) are Plaine Champaignes, but Grasing, and not Ouen-growne with Heath, or the like: Or else Timber-Shades, as in Forrests, and the like. It is noted also, that Groues of Bayes doe forbid Pestilent Aires; Which was accounted a great Cause of the Wholesome Aire of Antiochia. There be also some Soyles that put forth Odorate Herbes of themselues; As Wilde Thyme; Wilde Maioram; Penny-Roiall; Camomill; And in which the BriarRoses smell almost like Muske-Roses; Which (no doubt) are Signes that doe discouer an Excellent Aire.

It were good for Men, to thinke of hauing Healthfull Aire, in their Houses; Which will neuer be, if the Roomes be Low-roosed, or full of Windowes, and

Doores; For the one maketh the Aire Close, and not Fresh; And the other maketh it Exceeding Vnequall; Which is a great Enemy to Health. The Windowes also should not be high vp to the Roofe, (which is in vse for Beauty, and Magnificence,) but Low. Also Stone-Walls are not wholesome; But Timber is more wholesome; And especially Brick. Nay it hath beene vsed by some, with great Successe, to make their Walls thicke; And to put a Lay of Chalke betweene the Brickes, to take away all Dampishnesse.

These Emissions, (as we said before,) are handled, and ought to be handled, by themselues, vnder their Proper Titles: That is, Visibles, and Andibles, each a-part: In this Place, it shall suffice to giue some generall Obseruations, Common to both. First, they seeme to be Incorporeall. Secondly, they Worke Swiftly. Thirdly, they Worke at Large Distances. Fourthly, in Curious Varieties. Fifthly, they are not Effectiue of any Thing; Nor leaue no Worke behinde them; But are Energies meerely; For their Working vpon Mirrours, and Places of Eccho, doth not alter any Thing in those Bodies; But it is the same Action with the Originall, onely Repercussed. And as for the Shaking of windowes, or Rarefying the Aire by Great Noyses; And the Heat caused by Burning-Glasses; They are rather Concomitants of the Andible, and Visible Species, than the Effects of them. Sixthly, they seeme to be ofso Tender, and Weake a Nature, as they affect onely such a Rare, and Attenuate Substance, as is the spirit of Liuing Creatures.

It is mentioned in some Stories, that where Children haue been Exposed, or taken away young from their Parents; And that afterwards they haue approached to their Parents presence, the Parents, (though they haue not knowne them,) haue had a Secret Ioy, or Other Alteration thereupon.

There was an AEgyptian South-Sayer, that made Anthonius beleeue, that his Genius, (which otherwise was Braue, and Confident,) was, in the Presence of Octanianus Caesar, Poore, and Cowardly: And therefore, he aduised him, to absent himselfe, (as much as he could,) and remoue far from him. This South-Sayer was thought to be suborned by Cleopatra, to make him liue in AEgypt, and other Remote Places from Rome. Howsouer the Conceit of a Perdominant

or Mastering Spirit, of one Man ouer Another, is Ancient, and Receiued still, euen in Vulgar Opinion.

There are Conceits, that some Men, that are of an Ill, and Melancholy Nature, doe incline the Company, into which they come, to be Sad; and Ill disposed; And contrariwise, that Others, that are of a Iouiall Nature, doe dispose the Company to be Merry and Cheerefull. And againe, that some Men are Lucky to be kept Company with, and Employed; And Others Vnlucky. Certninly, it is agreeable to Reason, that there are, at the least, some Light Effluxions from Spirit to Spirit, when Men are in Presence one with another, as well as from Body to Body.

It hath beene obserued, that Old Men, who haue loued Toung Company, and beene Conuersant continually with them, haue beene of Long Life; Their Spirits, (as it seemeth,) being Recreated by such Company. Such were the Ancient Sophists, and Rhetoricians; Which euer had Young Auditours, and Disciples; As Gorgias, Protagoras, Isocrates, &c. Who liued till they were an Hundred yeares Old. And so likewise did many of the Grammarians, and Schoole-Masters; such as was Orbilius, &c.

Audacity and Confidence doth; in Ciuill Businesse, so great Effects, as a Man may (reasonably) doubt, that besides the very Daring, and Earnestnesse, and Persisting and Importunity, there should be some Secret Binding, and Stooping of other Mens Spirits, to such Persons.

The Affections (no doubt) doe make the Spirits more Powerfull, and Actiue; And especially those Affections, which draw the Spirits into the Eyes: Which are two: Loue, and Enuy, which is called Oculus Malus. As for Loue, the Platonists, (some of them,) goe so farre, as to hold that the Spirit of the Louer, doth passe into the Spirits, of the Person Loued; Which causeth the desire of Returne into the Body, whence it was Emitted: Whereupon followeth that Appetite of Contact, and Coninuction. which is in Louers. And this is obserued likewise, that the Aspects that procure Loue, are not Gazings, but Sudden Glances, and Dartings of the Eye. As for Enuy, that emitteth some Maligne and Poysonous Spirit, which taketh hold of the Spirit of Another; And is likewise of greatest

Force, when the Cast of the Eye is Oblique. It hath beene noted also, that it is most Dangerous, when an Enuious Eye is cast vpon Persons in Glory, and Triumph, and Ioy. The Reason whereof is, for that, at such times, the Spirits come forth most, into the Outward Parts, and so meet the Percussion of the Enuious Eye, more at Hand: And therefore it hath beene noted, that after great Triumphs, Men haue beene ill disposed, for some Daies following. We see the Opinion of Fascination is Ancient, for both Effects; Of Procuring Loue; And Sicknesse caused by Envy: And Fascination is euer by the Eye. But yet if there be any such Infection from Spirit to Spirit, there is no doubt, but that it worketh by Presence, and not by the Eye alone; Yet most Forcibly by the Eye.

Feare, and Shame, are likewise Infection; For we see that the Starting of one will make another ready to Start: And when one Man is out of Conntenance in a Company, others doe likewise Blush in his behalfe.

Now we will speake of the Force of Imagination vpon other Bodies; And of the Meanes to Exalt and Strengthen it. Imagination, in this Place, I vnderstand to be, the Representation of an Indiuiduall Thought. Imagination is of three Kinds: The First Ioyned with Beleefe of that which is to Come: The Second Ioyned with Memory of that which is Past: And the Third is of Things Present, or as if they were Present; For I comprehend in this, Imaginations Faigned, and at Pleasure; As if one should Imagine such a Man to be in the Vestments of a Pope; Or to haue Wings. I single out, for this time, that which is with Faith, or Beleefe of that which is to Come. The Inquisition of this Subiect, in our way, (which is by Induction,) is wonderfull hard; for the Things that are reported, are full of Fables; And New Experiments can hardly be made, but with Extreme Caution, for the Reason which wee will hereafter declare.

The Power of Imagination is in three Kindes; The First, vpon the Body of the Imaginant; Including likewise the Childe in the Mothers Wombe; The Second is, the Power of it vpon Dead Bodies, as Plants, Wood, Stone, Metall, &c. The Third is, the Power of it, vpon the Spirits of Men, and Liuing Creatures: And with this last we will onely meddle.

The Probleme therefore is, whether a Man Constantly and Strongly Beleeuing, that such a Thing shall be; (As that such an One will Loue Him; Or that such an One will Grant him his Request; Or that such an One shall Recouer a Sicknesse; Or the like;) It doth helpe any thing to the Effecting of the Thing it selfe. And here againe we must warily distinguish; For it is not meant, (as hath beene partly said before,) that it should helpe by Making a Man more Stout, or more Industrious; (In which kinde a Constant Beleefe doth much;) But meerely by a Secret Operation, or Binding, or Changing the Spirit of Another: And in this it is hard, (as we began to say,) to make any New Experiment; For I cannot command my Selfe to Beleeue what I will, and so no Triall can be made. Nay it is worse; For whatsoeuer a Man Imagineth doubtingly, or with Feare, must needs doe hurt, if Imagination haue any Power at all; For a Man representeth that oftner, that he feareth, than the contrary.

The Helpe therefore is, for a Man to worke by Another, in whom he may Create Beleefe, and not by Himselfe; Vntill Himselfe haue found by Experience, that Imagination doth preuaile; For then Experience worketh in Himselfe Beleefe; If the Beleefe, that such a Thing shall be, be ioyned with a Beleefe, that his Imagination may procure it.

For Example; I related one time to a Man, that was Curious, and Vaine enough in these Things; That I saw a Kinds of Iugler, that had a Paire of Cards, and would tell a Man what Card he thought. This Pretended Learned Man told me; It was a Mistaking in Me; For (said he) it was not the Knowledge of the Mans Thought, (for that is Proper to God,) but it was the Inforcing of a Thought vpon him, and Binding his Imagination by a Stronger, that he could Thinke no other Card. And thereupon he asked me a Question, or two, which I thought he did but cunningly, knowing before what vsed to be the Feats of the Iugler. Sir, (said hee,) doe you remember whether he told the Card, the Man thought, Himselfe, or bade Another to tell it. I answered (as was true;) That be bade Another tell it. Whereunto he said; so I thought: For (said he) Himselfe could not haue put on so strong an Imagination; But by telling the other the Card, (who beleeued that the Iugler was some Strange Man, and could doe Strange Things,)

that other Man caught a strong Imagination. I harkened vnto him, thinking for a Vanity he spoke prettily. Then he asked me another Question: Saith he; Doe you remember, whether he had the Man think the Card first, and afterwards told the other Man in his Eare, what he should thinke, Or else that he did whisper first in the Mans Eare, that should tell the Card, telling that such a Man should thinke such a Card, and after bade the Man thinke a Card? I told him, as was true; That he did first whisper the Man in the Eare, that such a Man should thinke such a Card: Vpon this the Learned Man did much Exult, and Please himselfe, saying; Loe, you may see that my Opinion is right: For if the Man had: thought first, his Thought had beene Fixed; But the other Imagining first, bound his Thought. Which though it did somewhat sinke with mee, yet I made it Lighter than I thought, and said; I thought it was Confederacy, betweene the Iugler, and the two Seruants: Though (Indeed) I had no Reason so to thinke: For they were both my Fathers Seruants; And he had neuer plaid in the House before. The Iugler also did cause a Garter to be held vp; And tooke vpon him, to know, that such a One, should point in such a Place, of the Garter; As it should be neare so many Inches to the Longer End, and so many to the Shorter; And still he did it, by First Telling the Imaginer, and after Bidding the Actour Thinke.

Hauing told this Relation, not for the Weight thereof, but because it doth handsomely open the Nature of the Question; I returne to that I said; That Experiments of Imagination, must be practised by Others, and not by a Mans Selfe. For there be Three Meanes to fortifie Beleefe: The First is Experience: The Second is Reason: And the Third is Authoritie: And that of these, which is farre the most Potent, is Authoritie: For Beleefe vpon Reason, or Experience, will Stagger.

For Authoritie, it is of two Kindes; Beleefe in an Art; And Beleefe in a Man. And for Things of Beleefe in an Art; A Man may exercise them by Himselfe; But for Beleefe in a Man, it must be by Another. Therfore, if a Man beleeue in Astrologie, and finde a Figure Prosperous; Or beleeue in Naturall Magicke, and that a Ring with such a Stone, or such a Peece of a Liuing Creature, Carried, will doe good; It may helpe his Imagination: But the Beleefe in a Man is farre the

more Actiue. But howsoeuer, all Authoritie must be out of a Mans Selfe, turned (as was said,) either vpon an Art, or vpon a Man: And where Authoritie is from one Man to another, there the Second must be Ignorant, and not Learned, or Full of Thoughts; And such are (for the most part) all Witches, and Superstitious Persons; Whose Beleefes, tied to their Teachers, and Traditions, are no whit controlled, either by Reason, or Experience: And vpon the same Reason, in Magicke, they vse (for the most part,) Boyes, and Young People; whose Spirits easiliest take Beleefe, and Imagination.

Now to fortifie Imagination, there be three Wayes: The Authoritie whence the Beleefe is deriued; Meanes to Quicken and Corroborate the Imagination; And Meanes to Repeat it, and Refresh it.

For the Authoritie, wee haue already spoken: As for the Second; Namely the Meanes to Quicken, and Corroborate the Imagination; Wee see what hath beene vsed in Magicke; (If there be in those Practises any thing that is purely Naturall;) As Vestments; Characters; Words; Seales; Some Parts of Plants, or Liuing Creatures; Stones; Choice of the Houre; Gestures and Motions; Also Incenses, and Odours; Choice of Societie, which increaseth Imagination; Diets and Preparations for some time before. And for Words, there haue beene euer vsed, either Barbarous Words, of no Sense, lest they should disturbe the Imagination; Or Words of Similitude, that may second and feed the Imagination: And this was euer as well in Heathen Charmes, as in Charmes of latter Times. There are vsed also Scripture-Words; For that the Beleefe, that Religious Texts, and Words, haue Power, may strengthen the Imagination: And for the same Reason, Hebrew Words, (which amongst vs is counted the Holy Tongue, and the Words more Mysticall,) are often vsed.

For the Refreshing of the Imagination, (which was the Third Meanes of Exalting it;) Wee see the Practises of Magicke, as in Images of Wax,

and the like, that should Melt by little, and little; Or some other Things Buried in Mucke, that should Putrifie by little and little; Or the like: For so oft as the Imaginant doth thinke of those Things, so oft doth he represent to his Imagination, the Effect of that he desireth.

If there be any Power in Imagination, it is lesse credible, that it should be so Incorporcall and Immateriate a Vertue, as to worke at great Distances; Or through all Mediums Or vpon all Bodies: But that the Distance must be Competent; The Medium not Aduerse; And the Body Apt and Proportionate. Therefore if there be any Operation vpon Bodies, in Absence, by Nature; it is like to be conueyed from Man to Man, as Fame is; As if a Witch, by Imagination, should hurt any afarre off, it cannot be naturally, but by Working vpon the Spirit of some, that commeth to the Witch; And from that Party vpon the Imagination of Another; And so vpon Another; till it come to one that hath resort to the Party Intended; And so by Him to the Party intended himselfe. And although they speake, that it sufficeth, to take a Point, or a Peece of the Garment, or the Name of the Party, or the like; yet there is lesse Credit to be giuen to those Things, except it be by Working of euill Spirits.

The Experiments, which may certainly demonstrate the Power of Imagination, vpon other Bodies, are few, or none: For the Experiments of Witchcraft, are no cleare Proofes; For that they may be, by a Tacite Operation of Maligne Spirits: We shall therefore be forced, in this Enquire, to resort to New Experiments: Wherein wee can giue only Directions of Trialls, and not any Positiue Experiments. And if any Man thinke, that wee ought to haue staied, till wee had made Experiment, of some of them, our selues, (as wee doe commonly in other Titles,) the Truth is, that these Effects of Imagination vpon other Bodies, haue so little Credit with vs, as we shall trie them at leisure: But in the meane Time, we will lead others the way.

When you worke by the Imagination of Another, it is necessary, that He, by whom you worke, haue a Precedent Opinion of you, that you can doe Strange Things; Or that you are a Man of Art, as they call it; For else the Simple Affirmation to Another, that this or that shall be, can worke but a weake Impression, in his Imagination.

It were good, because you cannot discerne fully of the Strength of Imagination, in one Man more than another, that you did vse the Imagination of more than One; That so you may light vpon a Strong One. As if a Physitian

should tell Three, or Foure, of his Patients Seruants, that their Master shall surely recouer.

The Imagination of One, that you shall vse, (such is the Variety of Mens Mindes,) cannot be alwaies alike Constant, and Strong; And if the Successe follow not speedily, it will faint and leese Strength. To remedy this, you must pretend to Him, whose Imagination you vse, seuerall Degrees of Meanes, by which to Operate; As to prescribe him, that euery three Dayes, if he finde not the Successe Apparent, he doe vse another Root, or Part of a Beast, or Ring, &c. As being of more Force; And if that faile, Another; And if that, Another; till Seuen Times. Also you must prescribe a good Large Time for the Effect you promise; As if you should tell a Seruant of a Sick-Man, that his Master shall recouer, but it will be Fourteene daies, eare he findeth it apparently, &c. All this to entertaine the Imagination, that it wauer lesse.

It is certaine, that Potions, or Things taken into the Body: Incenses and Perfumes taken at the Nosthrills; And Ointments of some Parts; doe (naturally) worke vpon the Imagination of Him that taketh them. And therefore it must needs greatly Cooperate with the Imagination of him, whom you vse, if you presribe him, before he doe vse the Receit, for the Worke which he desireth, that he doe take such a Pill, or a Spoonefull of Liquour, Or burne such an Incense; Or Annoint his Temples, or the Soles of his Feet, with such an Ointment, or Oyle: And you must chuse, for the Composition of such Pill, Perfume, or Ointment, such Ingredients, as doe make the Spirits, a little more Grosse, or Muddy: Whereby the Imagination will fix the better.

The Body Passiue, and to be Wrought Vpon, (I meane not of the Imaginant,) is better wrought vpon, (as hath beene partly touched,) at some Times, than at other: As if you should prescribe a Seruant, about a Sick Person, (whom you haue possessed, that his Master shall recouer,) when his Master is fast asleepe, to vse such a Root, or such a Root. For Imagination is like to worke better vpon Sleeping Men, than Men Awake, As wee shall shew when we handle Dreames.

We finde in the Art of Memory, that Images Visible, worke better than other Conceits: As if you would remember the Word Philosophy, you shall more

surely doe it, by Imagining that such a Man, (For Men are best Places,) is reading vpon Aristotles Physickes; Than if you should Imagine him to say; I'le goe study Philosophy. And therefore, this Obseruation would be translated to the Subiect wee now speake of: For the more Lustrous the Imagination is, it filleth and fixeth the better. And therefore I conceiue, that you shall, in that Experiment, (whereof wee spake before,) of Binding of Thoughts, lesse faile, if you tell One, that such an One shal name one of Twenty Men, than if it were One of Twenty Cards. The Experiment of Binding of Thoughts, would be Diuersified, and tried to the Full: And you are to note, whether it hit for the most part, though not alwaies.

It is good to consider, vpon what Things, Imagination hath most Force: And the Rule, (as I conceiue,) is, that it hath most Force vpon Things, that haue the Lightest, and Easiest Motions. And therefore aboue all, vpon the Spirits of Men: And in them, vpon such Affections, as moue Lightest; As vpon Procuring of Loue; Binding of Lust, which is euer with Imagination; vpon Men in Feare; Or Men in Irresolution; And the like. Whatsoeuer is of this kinde would be throughly enquired. Trialls likewise would be made vpon Plants. and that diligently: As if you should tell a Man, that such a Tree would Dye this yeare; And will him, at these and these times, to goe vnto it, to see how it thriueth. As for In — imate Things, it is true, that the Mount of Shuffling of Cards, or Casting of Dice, are very Light Motions; And there is a Folly very vsuall, that Gamesters imagine, that some that stand by them, bring them ill Lucke. There would be Triall also made, of holding a Ring by a Threed in a Glasse, and telling him that holdeth it, before, that it shall strike so many times against the Side of the Glasse, and no more; Or of Holding a Key betweene two Mens Fingers, without a Charme; And to tell those that hold it, that at such a Name, it shall goe off their Fingers: For these two are Extreme Light Motions. And howsoeuer I haue no Opinion of these things, yet so much I conceiue to be true; That Strong Imagination hath more Force vpon Things Liuing, Or that haue, been Liuing, than Things meerely Inauimate; And more Force likewise vpon Light, and Subtill Motions, than vpon Motions Vehement, or P-nderous.

It is an vsuall Obseruation, that if the Body of One Murthered, be brought before the Murtherer, the Wounds will bleed a-fresh, Some doe affirme, that the Dead Body, vpon the Presence of the Murtherer, hath opened the Eyes; And that there haue beene such like Motions, as well where the Party Murthered hath beene Strengled, or Drew-ed, as where they haue beene Killed by Wounds, It may be, that this participateth of a Miracle, by Gods Iust Iudgement, who vsually bringeth Murthers to Lights But if it be Naturall, it must be referred to Imagination.

The Tying of the Point vpon the day of Mariage, to make Men Impotent towards their Wiues, which (as we haue formerly touched,) is so frequent in Zant, and Gascony, if it be Naturall, must be referred to the Imagination of Him that Tieth the Point. I conceiue it to haue the lesse Affinity with Witchcraft, because not Peculiar Persons onely, (such as Witches are,) but any Body may doe it.

There be many Things that worke vpon the Spirits of Man, by Secret Sympathy, and Antipathy; The Vertues of Pretious Stones worne, haue beene anciently and generally Receiued: And curiously assigned to Worke seuerall Effects. So much is true; That Stones haue in them fine Spirits; As appeareth by their Splendour: And therefore they may worke by Consort vpon the Spirits of Men, to Comfort, and Exhilarate them. Those that are the best, for that Effect, are the Diamond. the Emerald, the Iacinth Orientall, and the Gold-Stone, which is the Yellow Topaze. As for their particular Proprieties, there is no Credit to be giuen to them. But it is manifest, that Light, aboue all things, excelleth in Comforting the Spirits of Men: And it is very probable, that Light Varied doth the same Effect, with more Nouelty. And this is one of the Causes, why Pretious Stones comfort. And therefore it were good to haue Tincted Lanthornes. or Tincted Skreenes, of Glasse Coloured into Greene, Blew, Carnation, Crimson, Purple, &c. And to vse them with Candles in the Night. So likewise to haue Round Glasses, not onely of Glasse Coloured thorow, but with Colours laid betweene Crystals, with Handles to hold in ones Hand. Prismes are also Comfortable Things. They haue of Paris-Worke, Looking-Glasses, bordered

with broad Borders of small Crystall, and great Counterfete Pretious Stones, of all Colours, that are most Glorious and Pleasant to behold; Especially in the Night. The Pictures of Indian Feathers, are likewise Comfortable, and Pleasant to behold. So also Faire and Cleare Pooles doe greatly comfort the Eyes, and Spirits; Especially when the Sunne is not Glaring, but Ouercast; Or when the Moone shineth.

There be diuers Sorts of Bracelets fit to Comfort the Spirits; And they be of Three Intentions: Refrigerant; Corroborant; and Aperient. For Refrigerant, I wish them to be of Pearle, or of Corall, as is vsed: And it hath beene noted that Corall, if the Party that weareth it be ill disposed, will wax Pale: Which I beleeue to be true, because otherwise Distemper of Heat will make Corall lose Colour. I Commend also Beads, or little Plates of Lapis Lazuli; And Beads of Nitre, either alone, or with some Cordiall Mixture.

For Corroboration and Confortation, take such Bodies as are of Astringent Quality, without Manifest Cold. I commend Bead-Amber; which is full of Astriction, but yet is Vnctuous, and not Cold; And is conceiued to Impinguate those that weare such Beads: I commend also, Beads of HartsHorne, and Iuory, which are of the like Nature; Also Orenge-Beads; Also Beads of Lignum Aloës, Macerated first in Rose-Water, and Dryed.

For Opening, I Commend Beads, or Peeces of the Roots of Cardius Benedictus: Also of the Roots of Piony the Male; And of Orris; And of Calamus Aromaticus; And of Rew.

The Crampe, (no doubt,) commeth of Contraction of Sinnewes; Which is Manifest, in that it commeth either by Cold, or Drinesse; As after Consumptions, and Long Agues: For Cold and Drinesse doe (both of them) Contract, and Corrugate. We see also, that Chasing a little aboue the Place in paine, easeth the Crampe; Which is wrought by the Dilatation, of the Contracted Sinnewes, by Heat. There are in vse, for the Preuention of the Crampe, two Things; The one Rings of Sea Horse Teeth, worne vpon the Fingers; The other Bands of Greene Periwinckle, (the Herbe,) tied about the Calfe of the Leg, or the Thigh, &c. where the Crampe vseth to come. I doe finde this the more strange, because

Neither of these haue any Relaxing Vertue, but rather the Contrary. I iudge therefore, that their Working, is rather vpon the Spirits, within the Nerues, to make them striue lesse; Than vpon the Bodily Substance of the Nerues.

I would haue Triall made of two other Kindes of Bracelets, for Comforting the Heart, and Spirits; The one of the Trechisch of Vipers, made into little Peeces of Beads; For since they doe great Good Inwards, (especially for Pestilent Agues, it is like they will be Effectuall Outwards; Where they may be applied in greater Quantity. There would be Trochish likewise made of Snakes; Whose Flesh dried, is thought to haue a very Opening, and Cordiall Vertue. The other is, of Beads made of the Scarlet Powder, which they call Kermes; Which is the Principall Ingredient in their Cordiall Confection Alkermes: The Beads would be made vp with AmberGrice, and some Pomander.

It hath beene long receiued, and confirmed by diuers Trialls; That the Root of the Male-Piony, dried, tied to the Necke, doth helpe the Falling-Sicknesse; And likewise the Incubus, which wee call the Mare. The Cause of both these Diseases, and especially of the Epilepsie from the Stomach, is the Grossenesse of the Vapours, which rise and enter into the Cells of the Braine: And therfore the Working is, by Extreme, and Subtill Attenuations; Which that Simple hath. I iudge the like to be in Castoreum, Muske, Rew-Seed, Agnus Castus Seed, &c.

There is a Stone, which they call the Bloud-Stone, which worne is thought to be good for them that Bleed at the Nose: Which (no doubt) is by Astriction, and Cooling of the Spirits. Quare, if the Stone taken out of the Toads Head, be not of the like Vertue? For the Toade loueth Shade, and Coolenesse.

Light may be taken from the Experiment of the Horse-Tooth-Ring, and the Garland of Periwinckle, how that those things, which asswage the Strife of the Spirits, doe helpe diseases, contrary to the Intention desired: For in the Curing of the Crampe, the Intention is to relax the Sinnewes; But the Contraction of the Spirits, that they striue lesse, is the best Helpe: So to procure easie Tranailes of Women, the Intention is to bring downe the Childe; But the best Helpe is, to stay the Comming downe too Fast: Whereunto they say, the Toad-Stone likewise helpeth. So in Pestilent Feaners, the Intention is to expell the Intection by Sweat,

and Enapouration; But the best Meanes to doe it, is by Nitre, Diascordium, and other Coole Things, which doe for a time arrest the Expulsion, till Nature can doe it more quietly. For as one faith prettily; In the Quenching of the Flame of a Pestilent Ague, Nature is like People, that come to quench the Fire of a House; which are so busie, as one of them letteth another. Surely, it is an Excellent Axiome, and of Manifold Vse, that whasoeuer appeaseth the Contention of the Spirits, furthereth their Action.

The Writers of Naturall Magick, commend the Wearing of the Spoile of a Snake, for Preseruing of Health; I doubt it is but a Conceit; For that the Snake is thought to renue her Touth, by Casting her Spoile. They might as well take the Beake of an Eagle, or a Peece of a HartsHorne, because those Renue.

It hath beene Anciently Receiued, (For Pericles the Athenian vsed it,) and it is yet in vse, to weare little Bladders of Quick-Siluer, or Tablets of Arsenicke, as Preseruatines against the Plague: Not as they conceiue, for any Comfort they yeeld to the Spirits, but for that being Poysons themselues, they draw the Venome to them, from the Spirits.

Vide the Experiments 95.96. and 97. touching the Seuerall Sympathies, and Antipathies, for Medicinall Vse.

It is said, that the Guts or Skin of a Wolfe being applyed to the Belly, doe cure the Cholicke. It is true, that the Wolfe is a Beast of great Edacity, and Disgestion; And so, it may be, the Parts of him comfort the Bowels.

We see Scare-Crowes, are set vp to keep Birds from Corne, and Fruit; It is reported by some, that the Head of a Wolfe, whole, dried, and hanged vp in a Done-House, will scare away Vermine; Such as are Weasils, Polcats, and the like. It may be, the Head of a Dog will doe as much; For those Vermine with vs, know Dogs better than Wolues.

The Braines of some Creatures, (when their Heads are roasted) taken in Wine, are said to strengthen the Memory: As the Braines of Hares; Braines of Hens; Braines of Deeres, &c. And it seemeth, to be incident to the Braines of those Creatures, that are Fearefull.

The Ointment, that Witches vse, is reported to be made, of the Fat of Children, digged out of their Granes; Of the Iuyees of Smallage, Wolfebane, and Cinquefoile; Mingled with the Meale of fine Wheat. But I suppose that the Soperiferous Medicines are likest to doe it; Which are Henbane, Hemlocke, Mandrake, Moone-Shade, Tabacco, Opium, Saffron, PoplarLeaues, &c.

It is reported by some, that the Affections of Beasts, when they are in Strength, doe adde some Vertue, vnto Inanimate Things; As that the Skin of a Sheepe, deuoured by a Wolfe, moueth Itching; That a Stone, bitten by a Dog in Anger, being throwne at him, drunke in Powder, prouoketh Choler.

It hath beene obserued, that the Diet of Women with Childe, doth worke much vpon the Infant; As if the Mother eat Quinces much, and Coriander-Seed, (the Nature of both which is to represse and stay Vapours, that ascend to the Braine,) it will make the Childe Ingenious: And on the contrary side, if the Mother eat (much) Onions, or Beanes, or such Vapourous Food; Or drinke Wine, or Strong Drinke, immoderately; Or Fast much; Or be giuen to much Musing; (All which send, or draw Vapours to the Head,) It endangereth the Childe to become Lunaticke, or of Ionperfect Memory: And I make the same Iudgement of Tobacco, often taken by the Mother.

The Writers of Naturall Magicke report, that the Heart of an Ape, worne neare the Heart, comforteth the Heart, and increaseth Audacity. It is true, that the Ape is a Merry and Bold Beast. And that the same Heart likewise of an Ape, applied to the Necke, or Head, helpeth the Wit; And is good for the Falling-Sicknesse: The Ape also is a Witty Beast, and hath a Dry Braine; Which may be some Cause of Attenuation of Vapours in the Head. Yet it is said to moue Dreames also. It may be, the Heart of a Man would doe more, but that is more against Mens Mindes to vse it; Except it be in such as weare the Reliques of Saints.

The Flesh of a Hedge-Hog, Dressed, & Eaten, is said to be a great Drier: It is true, that the Iuyce of a Hedge-Hog, must needs be Harsh, and Dry, because it putteth forth so many Prickles: For Plants also, that are full of Prickles, are

generally Dry: As Briars, Thornes, Berberries: And therefore the Ashes of a Hedge-Hog are said to be a great Desiccatiue of Fistula's.

Mummy hath great force in Stanching of Bloud; which, as it may be ascribed to the Mixture of Balmes, that are Glutinous; So it may also partake of a Secret Propriety; In that the Bloud draweth Mans Flesh. And it is approued, that the Mosse, which groweth vpon the Skull of a Dead Men, vnburied, will stanch Bloud potently. And so doe the Dregs, or Powder of Bloud, seuered from the Water, and Dried.

It hath beene practised, to make White Swallowes, by Annointing of the Egs with Oyle. Which Effect may be produced, by the Stopping of the Pores of the Shell, and making the Iuyce, that putteth forth the Feathers afterwards, more Penurious. And it may be, the Annointing of the Egs, will be as Effectuall, as the Annointing of the Body; Of which Vide the Experiment 93.

It is reported, that the White of an Egge, or Bloud, mingled with Salt-Water, doth gather the Saltnesse, and maketh the Water sweeter. This may be by Adhesion; As in the 6. Experiment of Clarification: It may be also, that Bloud, and the White of an Egge, (which is the Malter of a Liuing Creature,) haue some Sympathy with Salt: For all Life hath a Sympathy with Salt. We see that Salt, laid to a Cut Finger, healeth it; So as it seemeth Salt draweth Bloud, as well as Bloud draweth Salt.

It hath beene anciently receiued, that the Sea-Hare, hath an Antipathy with the Lungs, (if it commeth neare the Body,) and erodeth them. Where of the Cause is conceiued to be, a Quality it hath of Heating the Brath, and Spirits; As Cantharides haue vpon the Watery Parts of the Body; As -ine and Hydro-icall Water. And it is a good Rule, that whatsoeuer hath an Operation vpon certaine Kindes of Matters, that, in Mars Body; worketh most vpon those Parts, wherein that kinde of Matter — .

Generally, that which is Dead, or Corrapted, or Excerned, hath Antipathy with the same Thing, when it is Aliue, and when it is Sound; And with those Parts which doe Excerne: As a Carkasse of Man is most Infectious, and Odious to Man; A Carrion of an Horse to an Horse, &c. Puro — Matter of Wounds, and

Vlcers, Car — ctes, Pockes, Scabs, Leprousie, to Sound Flesh; And the Excrement of euery Species to that Creature that Externeth them. But the Excrements are lesse Pericious than the Corruptions.

It is a Common Experience, that Dog know the Dog-Killer; When as in times of Infection. some Petty F ——— — is sent out to kill the Dogges; And that, though they haue neuer seene him before; yet they will all come forth, and barke, and fly at him.

The Relutions touching the Force of — , and the Secret — of Nature are so vncertaine, as they require a great deale of Examination, ere — conclude vpon them. I would haue it first throughly inquired, whether there be any Secret Passages of Sympathy, betweene Persons of neare Bloud; As Parents, Children, Brothers, Sisters, NurseChildren, Husbands, Wiues, &c. There be many Reports in Historie, that vpon the Death of Persons of such Nearenesse, Men haue had an inward Feeling of it. I my Selfe remember, that being in Paris, and my Father dying in London, two or three dayes before my Fathers death, I had a Dreame, which I told to diuers English Gentlemen; That my Fathers House, in the Countrey, was Plastered all ouer with Blacke Mortar. There is an Opinion abroad, (whether Idle or no I cannot say,) That louing and kinde Husbands, haue a Sense of their Wiues Breeding Childe, by some Accident in their owne Body.

Next to those that are Neare in Bloud, there may be the like Passage, and Instincts of Nature, betweene great Friends, and Enemies: And sometimes the Reucaling is vnto Another Person, and not to the Party Himselfe. I remember Philippus Commineus, (a graue Writer,) reporteth; That the Arch-Bishop of Vienna, (a Reuerend l'relate,) said (one day) after Masse, to King Lewis the eleuenth of France; Sir, your Mortall Enemie is dead; What time Duke Charles of Burgundie was Slaine, at the Battell of Granson, against the Switzers. Some triall also would be made, whether Pact or Agreement doe any thing; As if two Friends should agree, that such a Day in euery Weeke, they being in farre Distant Places, should Pray one for Another; Or should put on a Ring, or Tablet, one for anothers Sake; Whether if one of them should breake their Vow and Promise, the other should haue any Feeling of it, in Absence.

If there be any Force in Imaginations and Affections of Singular Persons; It is Probable the Force is much more in the Ioynt Imaginations and Affections of Multitudes: As if a Victorie should be won, or lost, in Remote Parts, whether is there not some Sense thereof, in the People whom it concerneth; Because of the great Ioy, or Griefe, that many Men are prossest with, at once? Pius Quintus, at the very time, when that Memorable Victorie was won, by the Christians, against the Turks, at the Nauall Battell of Lepanto, being then hearing of Causes in Consistorie, brake off suddenly, and said to those about him; It is now more time, we should giue thanks to God, for the great Victorie he hath granted vs, against the Turks. It is true, that Victorie had a Sympathie with his Spirit; For it was meerely his Worke, to conclude that League. It may be, that Reuelation was Diuine; But what shall wee say then, to a Number of Examples, amongst the Grecians, and Romans? Where the People, being in Theaters at Playes, haue had Newes of Victories, and Ouerthrowes, some few dayes, before any Messenger could come.

It is true, that that may hold in these Things, which is the generall Root of Superstition; Namely, that Men obserue when Things Hit, and not when they Misse: And commit to Memory the one, And forget and passe ouer the other. But touching Diuination, and the Misgiuing of Mindes, wee shall speake more, when wee handle in generall, the Nature of Mindes, and Soules, and Spirits.

Wee haue giuen formerly some Rules of Imgination; And touching the Fortifying of the Same. Wee haue set downe also some few Instances, and Directions, of the Force of Imagination, vpon Beasts, Birds, &c. vpon Plants; And vpon Inanimate Bodies: Wherein you must still obserue, that your Trialls be vpon Subtill and Light Motions, and not the contrary; For you will sooner, by Imagination, binde a Bird from Singing, than from Eating, or Flying: And I leaue it to euery Man, to choose Experiments, which himself thinketh most Commodious; Giuing now but a few Examples of euery of the Three Kindes.

Vse some Imaginant, (obseruing the Rules formerly prescribed,) for Binding of a Bird from Singing; And the like of a Dogge from Barking. Trie also the Imagination of some, whom you shall accommodate with things to fortifie it, in

Cocke-Fights, to make one Cocke more Hardy, and the other more Cowardly. It would be tried also, in Flying of Hawkes; Or in Coursing of a Deere, or Hare, with Grey-hounds; Or in Horse-Races; And the like Comparatiue Motions: For you may sooner by Imagination, quicken or slacke a Motion, than raise or cease it; As it is easier to make a Dogge goe slower, than to make him stand still that he may not run.

In Plants also, you may trie the Force of Imagination, vpon the Lighter Sort of Motions: As vpon the Sudden Fading, or Liuely Comming vp of Herbs; Or vpon their Bending one way, or other; Or vpon their Closing, and Opening; &c.

For Inanimate Things, you may trie the Force of Imagination, vpon Staying the Working of Beere, when the Barme is put in; Or vpon the Comming of Butter, or Cheese, after the Cherming, or the Rennet bee put in.

It is an Ancient Tradition, euery where alleaged, for Example of Secret Proprieties and Influxes, that the Torpede Marina, if it be touched with a long Stick, doth stupefie the Hand of him that toucheth it. It is one degree of Working at Distance, to worke by the Continuance of a Fit Medium; As Sound will be conueyed to the Eare, by striking vpon a Bow-String, if the Horne of the Bow be held to the Eare.

The Writers of Naturall Magicke, doe attribute much to the Vertues, that come from the Parts of Liuing Creatures; So as they be taken from them, the Creatures remaining still aliue: As if the Creature still liuing did infuse some Immateriate Vertue, and Vigour, into the Part Seuered. So much may be true; that any Part, taken from a Liuing Creature, newly Slaine, may be of greater force, than if it were taken from the like Creature dying of it Selfe, because it is fuller of Spirit.

Triall would be made, of the like Parts of Indiuidualls, in Plants, and Liuing Creatures; As to cut off a Stocke of a tree; And to lay that, whith you cut off, to Putrifie, to see whether it will Decay the Rest of the Stocke: Or if you should cut off part off the Taile, or Legge of a Dogge, or a Cat, and lay it to Putrifie, and so see whether it will Fester, or keepe from Healing, the Part which remaineth.

It is receiued, that it helpeth to Continue Loue, if one weare a Ring, or a Bracelet, of the Haire of the Party Beloued. But that may be by the Exciting of the Imagination: And perhaps a Gloue, or other like Fauour, may as well doe it.

The Sympathie of Indiuiduals, that haue beene Entire, or haue Touched, is of all others the most Incredible: Yet according vnto our faithfull Manner of Examination of Nature, wee will make some little mention of it. The Taking away of Warts, by Rubbing them with Somewhat that afterwards is put to waste, and consume, is a Common Experiment: And I doe apprehend it the rather, because of mine owne Experience. I had, from my Childhood, a Warts, vpon one of my Fingers: Afterwards when I was about Sixteene Yeeres old, being then at Paris, there grew vpon both my Hands a Number of Warts, (at the least an hundred,) in a Moneths Space. The English Embassadours Lady, who was a Woman farre from Superstition, told me, one day; She would helpe me away with my Warts: Whereupon she got a Peece of Lard, with the Skin on, and rubbed the Warts all ouer, with the Fat Side; And amongst the rest that Wart, which I had had from my Childhood; Then she uailed the Peece of Lord, with the Fat towards the Sunne, vpon a Poast of her Chamber Window, which was to the South, The Successe was, that within fiue weekes space, all the Warts went quite away: And that Wart, which I had so long endured, for Company. But at the rest I did little maruell, because they came in a Short time, and might goe away in a Short Time againe: But the Going away of that, which had staid so long, doth yet sticke with mee. They say the like is done, by the Rubbing of Warts with a Greene Elder Sticke, and then Burying the Sticke to Rot in Mucke. It would be tried, with Cornes, and Wenns, and such other Excrescences. I would haue it also tried, with some Parts of Liuing Creatures, that are nearest the Nature of Excrescences; As the Combes of Cocks, the Spurres of Cocks, the Hornes of Beasts, &c. And I would haue it tried both wnyes; Both by Rubbing those Parts with Lord, or Elder, as before; And by Cutting off some Peece of those Parts, and laying it to Consume; To see whether it will Worke any Effect, towards the Consumption of that Part, which was once Ioyned with it.

It is constantly Receiued, and touched, that the Anointing of the Weapon, than maketh the Wound, will heale the Wound it selfe. In this Experiment, vpon the Relation of Men of Credit, (though my selfe, as yet, am not fully inclined to beleoue it,) you shall note the Points following. First the Ointment, wherewith this is done, is made of Diuers Ingredients; whereof the Strangest and Hardest to come by, are the Mosse vpon the Skull of a dead Men, Vnburied; And the Fats of a Beare, and a Beare, killed in the Act of Generation. These two last I could easily suspect to be prescribed at a Starting Hole; That if the Experiment proued not, it mouight be pretended, that the Beasts were not killed in the due Time; For as for the Mosse, it is certaine, there is great Quantitie of it in Ireland, vpon Slaine Bodies, laid on Heaps, Vnburied. The other Ingredients are, the Bloud-Stone in Powder, and some other Things, which seeme to haue a Vertue to Stanch Bloud; As also the Mosse hath. And the Description of the Whole Ointment is to be found in the Chymicall Dispensatorie of Crollius. Secondly, the same Kinde of Ointment, applied to the Hurt it selfe, worketh not the Effect; but only applied to the Weapon. Thirdly, (which I like well) they doe not obserue the Confecting of the Ointment, vnder any certaine Constellation; which commonly is the Excuse of Magicall Medicines, when they faile, that they were not made vnder a fit Figure of Heauen. Fourthly, it may be applied to the Weapon, though the Party Hurt be at great Distance. Fifthly, it seemeth the Imagination of the Party, to be Cured, is not needfull to Concurre; For it may be done, without the Knowledge, of the Party Wounded; And thus much hath beene tried, that the Ointment (for Experiments sake,) hath beene wiped off the Weapon, without the knowledge of the Party Hurt, and presently the Party Hurt, hath beene in great Rage of Paine, till the Weapon was Reannointed. Sixthly, it is affirmed, that if you cannot get the Weapon, yet if you put an Instrument of Iron, or Wood, resembling the Weapon, into the Wound, whereby it bleedeth, the Annointing of that Instrument will serue, and worke the Effect. This I doubt should be a Deuice, to keepe this strange Forms of Cure, in Request, and Vse; Because many times you cannot come by the Weapon it selfe. Seuenthly, the Wound must be at first Washed cleans, with White Wine, or the Parties owne

Water; And then bound vp close in Fine Linnen, and no more Dressing renewed, till it be whole. Eighthly, the Sword it selfe must be Wrapped vp Close, as farre as the Ointment goeth, that it taketh no Wind. Ninthly, the Ointment, if you wipe it off from the Sword, and keepe it, will Serue againe; and rather Increase in Vertue, than Diminish. Tenthly, it will Cure in farte Shorter Time, than Ointments of Wounds commonly doe. Lastly, it will Cure a Beast, as well as a Man; which I like best of all the rest, because it subiecteth the Matter, to an Easie Triall.

I would haue Men know, that though I reprehend, the Easie Passing ouer, of the Causes of Things, by Ascribing them to Secret and Hidden Vertues, and Proprieties; (For this hath arrested, and laid asleepe, all true Enquiry, and Indications;) yet I doe not vnderstand, but that in the Practicall Part of Knowledge, much will be left to Experience, and Probation, whereunto Indication cannot so fully reach: And this not onely in Specie, but in Indiuiduo. So in Physicke, if you will cure the Iaundies, it is not enough to say, that the Medicine must not be Cooling; For that will hinder the Opening which the Disease requireth: That it must not be Hot; For that will exasperate Choler: That it must goe to the Gall; For there is the Obstruction which causeth the Disease, &c. But you must receiue from Experience, that Powder of Chamapytis, or the like, drunke in Beere, is good for the Iaundies: So againe, a wise Physitian doth not continue still the same Medicine, to a Patient; But he will vary, if the first Medicine doth not apparently succeed; For of those Remedies, that are good for the Iaundies, Stone, Agues, &c. that will doe good in one Body, which will not doe good in Another; According to the Correspondence the Medicine hath to the Indiuduall Body.

The Delight which Men haue in Popularity, Fame, Honour, Submission, and Subiection of other Mens Mindes, Wills, or Affections, (although these Things may be desired for other Ends,) seemeth to be a Thing, in it selfe, without Contemplation of Consequence, Gratefull & agreeable to the Nature of Man. This Thing (surely) is not without some Signification, as if all Spirits and Soules of Men, came forth out of one Diuine Limbus; Else why should Men be so much

affected with that, which others thinke, or say? The best Temper of Mindes desireth Good Name, and True Honour: The Lighter, Popularity, and Applause; The more depraued, Subiection, and Tyranny; As is seene in great Conquerours, and Troublers of the World: And yet more in Arch-Heretickes; for the Introducing of new Doctrines, is likewise an Affectation of Tyranny, ouer the Vnderstandings, and Beleefes of Men.

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A PRAYER, OR PSALM, MADE BY THE LORD BACON, CHANCELLOR OF ENGLAND.

Most gracious Lord God, my merciful Father, from my youth up, my Creator, my Redeemer, my Comforter. Thou, Lord, soundest and searchest the depths and secrets of all hearts: thou acknowledges! the upright of heart: thou judgest the hypocrite: thou ponderest men's thoughts and doings as in a balance: thou measurest their intentions as with a line: vanity and crooked ways cannot be hid from thee.

Remember, O Lord, how thy servant hath walked before thee: remember what I have first sought, and what hath been principal in my intentions. I have loved thy assemblies: I have mourned for the divisions of thy church: I have delighted in the brightness of thy sanctuary. This vine, which thy right hand hath planted in this nation, I have ever prayed unto thee, that it might have the first and the latter rain; and that it might stretch her branches to the seas and to the floods. The state and bread of the poor and oppressed have been precious in mine eyes: I have hated all cruelty and hardness of heart: I have, though in a despised weed, procured the good of all men. If any have been my enemies, I thought not of them; neither hath the sun almost set upon my displeasure; but I have been as a dove, free from superfluity of maliciousness. Thy creatures have been my books, but thy Scriptures much more. I have sought thee in the courts, fields, and gardens, but I have found thee in thy temples.

Thousands have been my sins,and ten thousands my transgressions; but thy sanctifications have remained with me, and my heart, through thy grace, hath been an unquenched coal upon thine altar. O Lord, my strength, I have since my youth met with thee in all my ways, by thy fatherly compassions, by thy comfortable chastisements, and by thy most visible providence. As thy favours have increased upon me, so have thy corrections; so as thou hast been always near me, O Lord; and ever as my worldly blessings were exalted, so secret darts from thee have pierced ire; and when I have ascended before men, I have

descended in humiliation before thee. And now, when I thought most of peace and honour, thy hand is heavy upon me, and hath humbled me according to thy former loving-kindness, keeping me still in thy fatherly school, not as a bastard, but as a child. Just are thy judgments upon me for my sins, which are more in number than the sands of the sea, but have no proportion to thy mercies; for what are the sands of the sea, earth, heavens, and all these are nothing to thy mercies. Besides my innumerable sins, I confess before thee, that I am debtor to thee for the gracious talent of thy gifts and graces, which I have neither put into a napkin, nor put it, as I ought, to exchangers, where it might have made best profit, but misspent it in things for which I was least fit: so I may truly say, my soul hath been a stranger in the course of my pilgrimage. Be merciful unto me, Lord, for my Saviour's sake, and receive me into thy bosom, or guide me in thy way.

A PRAYER MADE AND USED BY THE LORD CHANCELLOR BACON

O eternal God, and most merciful Father in Jesus Christ: Let the words of our mouths, and the meditations of our hearts be now and ever gracious in thy sight, and acceptable unto thee, Lord, our God, our strength, and our Redeemer.

O eternal God, and most merciful Father in Jesus Christ, in whom thou hast made a covenant of grace and mercy with all those that come unto thee in him; in his name and mediation we humbly prostrate ourselves before the throne of thy mercies seat, acknowledging that, by the breich of all thy holy laws and commandments, we are become wild olive branches, strangers to thy covenant of grace; we have defaced in ourselves thy sacred image imprinted in us by creation; we have sinned against heaven and before thee, and are no more worthy to be called thy children. O admit us into the place even of hired servants. Lord, thou hast formed us in our mothers' wombs, thy providence hath hitherto watched over us, and preserved us unto this period of time: stay not the course of thy mercies and loving-kindness towards us: have mercy upon us, O Lord, for thy dear Son Christ Jesus sake, who is the way, the truth, and the life. In him, O Lord, we appeal from thy justice to thy mercy, beseeching thee in his name, and for his sake only, thou wilt be graciously pleased freely to pardon and forgive us all our sins and disobedience, whether in thought, word, or deed, committed against thy divine majesty; and in his precious blood-shedding, death, and perfect obedience, free us from the guilt, the stain, the punishment, and dominion of all our sins, and clothe us with his perfect righteousness. There is mercy with thee, O Lord, that thou mayest be feared; yea, thy mercies swallow up the greatness of our sins: speak peace to our souls and consciences; make us happy in the free remission of all our sins, and be reconciled to thy poor servants in Jesus Christ, in whom thou art well pleased: suffer not the works of thine own hands to perish; thou art not delighted in the death of sinners, but in their conversion. Turn our hearts, and we shall be turned; convert us, and we shall be

converted; illuminate the eyes of our minds and understanding with the bright beams of thy Holy Spirit, that we may daily grow in the saving knowledge of the heavenly mystery of our redemption, wrought by our dear Lord and Saviour Jesus Christ; sanctify our wills and affection by the same Spirit, the most sacred fountain of all grace and goodness; reduce them to the obedience of thy most holy will in the practice of all piety toward thee, and charity towards all men. Inflame our hearts with thy love, cast forth of them what displeaseth thee, all infidelity, hardness of heart, profaneness, hypocrisy, contempt of thy holy word and ordinances, all uncleanness, and whatsoever advanceth itself in opposition to thy holy will. And grant that henceforth, through thy grace, we may be enabled to lead a godly, holy, sober, and Christian life, in true sincerity and uprightness of heart before thee. To this end, plant thy holy fear in our hearts, grant that it may never depart from before our eyes, but continually guide our feet in the paths of thy righteousness, and in the ways of thy commandments: increase our weak faith, grant it may daily bring forth the true fruits of unfeigned repentance, that by the power of the death of our Lord and Saviour Jesus Christ we may daily die unto sin, and by the power of his resurrection we may be quickened, and raised up to newness of life, may be truly born anew, and may be effectually made partakers of the first resurrection, that then the second death may never have dominion over us. Teach us, O Lord, so to number our days, that we may apply our hearts unto wisdom; make us ever mindful of our last end, and continually to exercise the knowledge of grace in our hearts, that in the said divorce of soul and body, we may be translated here to that kingdom of glory prepared for all those that love thee, and shall trust in thee; even then and ever, O Lord, let thy holy angels pitch their tents round about us, to guard and defend us from all the malice of Satan, and from all perils both of soul and body. Pardon all our unthankfulness, make us daily more and more thankful for all thy mercies and benefits daily poured down upon us. Let these our humble prayers ascend to the throne of grace, and be granted not only for these mercies, but for whatsoever else thy wisdom knows needful for us; and for all those that are in need, misery, and distress, whom, Lord, thou hast afflicted either in soul of

body; grant them patience and perseverance in the end, and to the end: And that, O Lord, not for any merits of ours, but only for the merits of thy Son, and our alone Saviour Christ Jesus; to whom with thee and the Holy Spirit be ascribed all glory, &c. *Amen*.

THE STUDENT'S PRAYER.

To God the Father, God the Word, God the Spirit, we pour forth most humble and hearty supplications; that he remembering the calamities of mankind, and the pilgrimage of this our life, in which we wear out days few and evil, would please to open to us new refreshments out of the fountains of his goodness, for the alleviating of our miseries. This also we humbly and ear nestly beg, that human things may not prejudice such as are divine; neither that from the unlocking of the gates of sense, and the kindling of a greater natural light, any thing of incredulity, or intellectual night, may arise in our minds towards divine mysteries. But, rather, that by our mind thoroughly cleansed and purged from fancy and vanities, and yet subject and perfectly given up to the divine oracles, there may be given unto faith the things that are faith's. *Amen*.

THE WRITER'S PRAYER.

Thou, O Father, who gavest the visible light as the first-born of thy creatures, and didst pour into man the intellectual light as the top and consummation of thy workmanship, be pleased to protect and govern this work, which coming from thy goodness, returneth to thy glorv. Thou after thou hadst reviewed the works which thy hands had made, beheldest that every thing was very good, and thou didst rest with complacency in them. But man, reflecting on the works which he had made, saw that all was vanity and vexation of spirit, and could by no means acquiesce in them. Wherefore, if we labour in thy works with the sweat of our brows, thou wilt make us partakers of thy vision and thy Sabbath We humbly beg that this mind may he steadfastly in us; and that thou, by our hands, and also by the hands of others, on whom thou shall bestow the same spirit, wilt please to convey a largess of new alms to thy family of mankind. These things we commend to thy everlasting love, by our Jesus, thy Christ, God with us. *Amen*.

The Union of the Two Kingdoms of Scotland and England

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FOR THE RIGHT HONOURABLE, SIR ANDREW RAMSAY KNIGHT, BARRON OF ABBOTS-HALL, &C. LORD PROVOST OF EDINBURGH, AND ONE OF HIS MAJESTIES MOST HONOURABLE PRIVY COUNCIL.
A SPEECH USED BY SIR FRANCIS BACON IN THE LOWER HOUSE OF PARLIAMENT, 50. JACOBI, CONCERNING THE ARTICLE OF GENERAL NATURALIZATION OF THE SCOTS NATION.
A SPEECH USED BY SIR FRANCIS BACON IN THE LOWER HOUSE OF PARLIAMENT, BY OCCASION OF A MOTION CONCERNING THE UNION OF LAWS.
A BRIEF DISCOURSE, OF THE HAPPY UNION OF THE KINGDOMES OF ENGLAND AND SCOTLAND.
CERTAIN ARTICLES OR CONSIDERATIONS, TOUCHING THE UNION OF THE KINGDOMS OF ENGLAND AND SCOTLAND.

THE UNION OF THE TWO KINGDOMS OF SCOTLAND AND ENGLAND: OR, The elaborate Papers of Sir Francis Bacon, Lord Verulam, Viscount of St. Alban, sometime High Chancellor of England; The greatest Sates-man of his Nation, and Schollar of his Age, concerning that Affair.

Published in this form, for publick satisfaction.

Nullum numen abest.

Edinburgh, Printed in the year, 1670.

FOR THE RIGHT HONOURABLE, SIR ANDREW RAMSAY KNIGHT, BARRON OF ABBOTS-HALL, &C. LORD PROVOST OF EDINBURGH, AND ONE OF HIS MAJESTIES MOST HONOURABLE PRIVY COUNCIL.

My Lord, OF the Union of the two Kingdoms now happily intended, these being the Elaborate and most Learned Thoughts and Resolutions of that great States-man, yet more great Lawyer, but most of all, the far greatest Schollar of his Age and Nation, Sir Francis Bacon, Lord Verulam, Viscount of St. Alban, presented to our sometimes Great SOVERAIGN, King James, the most Wise and Learned; I have advised them again to the Press, for the satisfaction of divers Noble and Worthy Persons, the Book in which they first came to light, being too voluminous for ordinary use, and rarely to be found in this Kingdom. And now, my Lord, I have made bold to give you the trouble of this Address, and present these few Papers, though small in bulk, yet vast in matter, to your hands, both upon my own, and the Authors account. Upon mine own, who have ever been your most humble Client, and have had your noble Friendship and Favour to countenance me in all my private concerns: And moreover, you do as Chief Magistrate, govern that City in which I was first educate in the Peripatetickwalks, and under, and in which, I have for divers years profest Letters, or practised Chyrurgery and Physick; and with the rest of my fellow Citizens, have found such refreshment under your Shade and Care, that I thought it my duty to signifie it by this small testimony of my thankfulness. And I am sure, that upon the Authors account, there is not a fitter Person, to whom these Papers could be committed. The great prudence and knowledge he had in State Affairs, made him very acceptable to the Kings and People of his own Nation; and the great moderation, watchfulness and wisdom you have used in governing this City, one of the greatest Interests of this Kingdom, hath endeared you to all

the Princes and Chiefs of this People. What labour and trouble you put upon your self to preserve it under the late Usurpers, your very enemies do acknowledge and praise. How your care and resolution preserved it from ruine, when the VVest Male-contents came marching to its very Gates, all that were faithful to His Majesties Service are ready to witness. And with what sweetness and calmness you have keeped together the Union of the Burgesses, who were ready, through heat and unadvisedness, to divide themselves, your late appearance before the Right Honourable Committee of Trade, and your oppose to those that were ready to violate the old Sett of the Good-Town, is a testimony above exception. I could add many more evidences of your great Prudence and Moderation; but I will rather forbear them, then give the least blush or trouble to your modesty: Only this I must add, that as your Lordship hath been a great Preserver of the Union of this Burgh; So I do not doubt, but you, who are the most eminent Member of a Party not least concerned in this Affair, I mean the Burroughs, will with your good advices, endeavour such an Union of the two Kingdoms, as shall most advance the Glory and Prerogative of our Gracious King, and promove most the Honour, Trade and Safety of both People. This and your Preservation, shall ever be the sincere Devotion of, My Lord, Your most humble Servant, C. Irvin.

A SPEECH USED BY SIR FRANCIS BACON IN THE LOWER HOUSE OF PARLIAMENT, 50. JACOBI, CONCERNING THE ARTICLE OF GENERAL NATURALIZATION OF THE SCOTS NATION.

IT may please you (Mr. Speaker) Preface I will use none, but put my self upon your good Opinions, to which I have been accustomed beyond my deservings. Neither will I hold you in suspence, what way I will choose; but now at the first, declare my self, that I mean to counsel the House to Naturalize this Nation. Wherein, nevertheless, I have a request to make unto you; which is of more efficacy to the purpose I have in hand, then all that I shall say afterwards. And it is the same which Demosthenes did, more then once in great Causes of Estate, to the people of Athens, Ut cum calcul• Suffragiorum, sumant Magnanimitatem Reip. That when they took into their hands, the Balls whereby to give their Voices, (according as the manner of them was) They would raise their thoughts, and lay aside those considerations which their private Vocations and Degrees mought minister and represent unto them; And would take upon them cogitations and minds, agreeable to the Dignity and Honour of the Estate.

For, (Mr. Speaker) as it was aptly and sharply said by Alexander to Parmenio; when upon the Recital of the great offers which Darius made, Parmenio said unto him, I would accept these offers, were I as Alexander: He turned it upon him again, So would I (saith he) were I as Parmenio. So in this cause, if an honest English Merchant (I do not single out that State in disgrace, for this Island ever held it Honourable, but only for an instance of a private profession) If an English Merchant should say, Surely I would proceed no further in the Union, were I as the King; It mought be reasonably answered, No more would the King, were He as an English Merchant. And the like may be said of a Gentleman of the Countrey, be he never so worthy and sufficient; Or of a

Lawyer, be he never so wise and learned; Or of any other particular condition in this Kingdom. For certainly (Mr. Speaker) if a man shall be only or chiefly sensible of those respects, which his particular Vocation and Degree shall suggest and infuse into him, and not enter into true and worthy considerations of Estate, he shall never be able aright to give counsel, or to take counsel in this matter. So that it this request be granted, I account the cause obtained.

But to proceed to the matter it self. All Consultations do rest upon Questions comparative. For when a question is de Vero, it is simple, for there is but one Truth: But when a question is de Bono, it is for the most part comparative: For there be differing degrees of Good and Evil; and the best of the Good is to be preferred and chosen, and the worst of the Evil is to be declined and avoided. And therefore, in a Question of this nature, you may not look for Answers proper to every inconvenience alledged; For somewhat that cannot be specially answered, may nevertheless be encountred and overweighed, by matter of greater moment. And therefore, the matter which I shall set forth unto you, will naturally receive this distribution of three parts.

First, an Answer unto those inconveniences which have been alledged to ensue, if we should give way to this Naturalization; which, I suppose, you will find not to be so great as they have been made; but that much dross is put into the ballance, to help to make weight.

Secondly, an Encounter against the remain of those inconveniences which cannot properly be answered, by much greater inconveniences which we shall incur, if we do not proceed to this Naturalization.

Thirdly, an Encounter likewise, but of another nature; That is, by the gain and benefit which we shall draw and purchase to our selves, by proceeding to this Naturalization. And yet to avoid confusion, which evermore followeth of too much Generality, it is necessary for me, before I proceed to perswasion, to use some distribution of the Points or Parts of Naturalization: which certainly can be no better nor none other, than the ancient distribution of Jus Civitatis, Jus Suffragii, vel Tribus, and Petitionis, sive Honorum. For all ability and capacity is either of private Interest, of Meum & Tuum, or of publick Service: And the

publick consisteth chiefly, either in Voice or in Office. Now it is the first of these (Mr. Speaker) that I will only handle at this time, and in this place; and reserve the other two for a Committee, because they receive more distinction and restriction.

To come therefore to the inconveniences alledged on the other part. The first of them is, that there may ensue of this Naturalization, a surcharge of people upon this Realm of England, which is supposed already to have the full charge and content; and therefore, there cannot be an adm•ssion of the adoptive, without a diminution of the Fortunes and Conditions of those that are Native Subjects of this Realm. A grave objection (Mr. Speaker) and very dutiful; for it proceedeth not of any unkindness to the Scots Nation, but of a natural fastness to our selves. For that Answer of the Virgins, Ne forte non sufficiat Vobis & Nobis, proceeded not out of any envy or malign humour, but out of providence, and that original charity which begins with our selves. And I must confess (Mr. Speaker) that as the Gentleman said, when Abraham and Lot, in regard of the greatness of their Families, grew pent and straitned; it is true, that (Brethren though they were) they grew to difference, and to those words, Vade tu ad dextram, & ego ad sinistram, &c. But certainly, I should never have brought that example on that side; for we see what followed of it, how that this separation, ad dextram and ad sinistram, caused the miserable captivity of the one Brother, and the dangerous, though prosperous war, of the other, for his rescous and recovery.

But to this objection (M. Speaker) being so weighty and so principal, I mean to give three several Answers; every one of them being, to mine understanding, by it self sufficient.

The first is, that this Opinion of the numbers of the Scots Nation, that should be likely to plant themselves here amongst us, will be found to be a thing rather in conceit then in event. For (Mr. Speaker) you shall find these plausible similitudes, of a Tree that will thrive the better if it be removed into the more fruitful Soil; And of Sheep or Cattel, that if they find a gap or passage open, will leave the more barren Pasture, and get into the more rich and plentiful; To be but Arguments meerly superficial, and to have no sound resemblance with the

transplanting or transferring of Families. For the Tree, we know, by nature, as soon as it is set in the better ground, can fasten upon it and take nutriment from it; And a Sheep, as soon as he gets into the better Pasture, what should let him to graze and feed? But there belongeth more (I take it) to a Family or particular person, that shall remove from one Nation to another: For if (Mr. Speaker) they have not Stock, Means, Acquaintance and Custom, Habitation, Trades, Countenance and the like; I hope, you doubt not but they will starve in the midst of the rich Pasture, and are far enough off from grazing at their pleasure. And therefore, in this point which is conjectural, experience is the best Guide; for the time past is a Pattern of the time to come. I think no man doubteth (Mr. Speaker) but his Majesties first coming in was as the greatest Spring-tide, for the confluence and entrance of that Nation. Now I would fain understand, in these four years space, and in the fulness and strength of the Current and Tide, how many Families of the Scots men are planted in the Cities, Burroughs and Towns of this Kingdom? For I do assure my self, that, more then some persons of Quality about his Majesties Person here at the Court and in London, and some other inferiour persons that have a dependancy upon them; The Return and Certificate, if such a Survey should be made, would be of a number extremely small. I report me to all your private knowledges, of the places where you inhabite.

Now (Mr. Speaker) as I said, Si in Ligno viridi it a fit, quid fiet in arido? I am sure there will be no more such Spring-tides. But, you will tell me of a multitude of Families of the Scots Nation in Polonia; And if they multiply in a Country so far off, how much more here at hand? For that, (Mr. Speaker) you must impute it, of necessity, to some special accident of time and place, that draweth them thither. For you see plainly, before your eyes, that in Germany, which is much nearer, and in France, where they are invited with Priviledges, and with this very Priviledge of Naturalization, yet no such number can be found: So as it cannot be either nearness of place or priviledge of person, that is the cause. But shall I tell you (Mr. Speaker) what I think; Of all the places in the world, near or far off, they will never take that course of life in this Kingdom, which they content

themselves with in Poland: For we see it to be the nature of all men, that they will rather discover poverty abroad then at home. There is never a Gentleman that hath over-reached himself in expence, and thereby must abate his Countenance, but he will rather travel and do it abroad then at home. And we know well, they have good high Stomachs, and have ever stood in some terms and emulation with us; and therefore they will never live here, except they can live in good fashion. So as I assure you (Mr. Speaker) I am of opinion, that the strife which we have now to admit them, will have like sequel as that contention had between the Nobility and People of Rome, for the admitting of a Plebeian Consul; which while it was in passing, was very vehement and mightily stood upon: and when the people had obtained it, they never made any Plebeian Consul, no not in sixty years after. And so will this be for many years, as I am perswaded, rather a matter in opinion, then in use or effect. And this is the first Answer that I give to this main inconvenience pretended, of surcharge of People.

The second Answer which I give to this Objection, is this. I must have leave to doubt, (Mr. Speaker) that this Realm of England is not yet peopled to the full. For certain it is, that the Territories of France, Italy, Flanders and some parts of Germany, do in equal space of ground bear and contain a far greater quantity of People, if they were mustered by the Poll. Neither can I see, that this Kingdom is so much inferiour unto those forraign parts in fruitfulness, as it is in population; which makes me conceive, we have not our full charge. Besides, I do see manifestly among us, the badges and tokens rather of scarceness then of press of people; as drowned Grounds, Commons, Wastes and the like: Which is a plain demonstration, that howsoever there may bean over swelling throng and press of people here about London; which is most in our eye, yet the body of the Kingdom is but thin sown with People. And whosoever shall compare the ruines and decayes of ancient Towns in this Realm, with the erections and augmentations of new; cannot but judge, that this Realm hath been far better peopled in former times, It may be, in the Heptarchy or otherwise: For generally the Rule holdeth, The Smaller State, the greater Population, proratd. And whether this be true or no, we need not seek further then to call to our

remembrance, how many of us serve here in this place, for desolate and decayed Burroughs. Again (Mr. Speaker) whosoever looketh into the Principles of Estate, must hold it, that it is the Mediterrane Countries, and not the Maritime, which need to fear surcharge of People. For all Sea-Provinces, especially Islands, have another Element besides the Earth and Soil, for their sustentation. For what an infinite number of people are and may be sustained by Fishing, Carriage by Sea and Merchandizing? wherein I do again discover, that we are not at all pinched by multitude of people: For if we were, it were not possible that we should relinquish and resign such an infinite benefit of Fishing to the Flemmings, as it is well known we do. And therefore, I see that we have wastes by Sea, as well as by Land: which still is an infallible Argument, that our Industry is not awaked to seek maintainance, by any over great press or charge of People.

And lastly (Mr. Speaker) there was never any Kingdom, in the Ages of the world, had, I think, so fair and happy means to issue and discharge the multitude of their People (if it were too great) as this Kingdom hath; in regard of that desolate and avasted Kingdom of Ireland, which (being a Countrey blessed with almost all the Dowries of Nature, as Rivers, Havens, Woods, Quarries, good Soil and temperate Climate, and now at last, under his Majesty, blessed also with obedience) doth, as it were, continually call unto us for our Colonies and Plantations. And so I conclude my second Answer to this pretended inconvenience of surcharge of People.

The third Answer (Mr. Speaker) which I give is this. I demand, what is the worst effect which can follow of surcharge of People? Look into all Stories, and you shall find it none other then some honourable War, for the enlargement of their Borders, which find themselves pent, upon foreign parts. Which inconvenience, in a valourous and warlike Nation, I know not whether I should term an inconvenience or no: For the saying is most true, though in another sense, Omne solum forti Patria. It was spoken indeed of the patience of an exil'd man; but it is no less true of the valout of a warlike Nation. And certainly (Mr. Speaker) I hope I may speak it without offence, That if we did hold our selves worthy, whensoever just cause should be given, either to recover our ancient

Rights, or to revenge our late wrongs, or to attain the Honour of our Ancestors, or to enlarge the Patrimony of our Posterity; We would never in this manner forget considerations of Amplitude and Greatness, and fall at variance about Profit and Reckonings; fitter a great deal for private Persons, then for Parliaments and Kingdoms. And thus (Mr. Speaker) I leave this first Objection, to such satisfaction as you have heard.

The second Objection is, that the Fundamental Laws of both these Kingdoms of England and Scotland, are yet divers and several; Nay more, that it is declared by the Instrument, that they shall so continue, and that there is no intent in his Majesty to make innovation in them: And therefore, that it should not be seasonable to proceed to this Naturalization, I hereby to endow them with our Rights and Priviledges, except they should likewise receive and submit themselves to our Laws. And this Objection likewise (Mr. Speaker) I allow to be a weighty Objection, and worthy to be well answered and discussed.

The Answer which I shall offer, is this. It is true, for mine own part (Mr. Speaker) that I wish the Scots Nation governed by our Laws; for I hold our Laws, with some reducement, worthy to govern, if it were the world. But, this is that which I say, and I desire therein your attention; That, according to the true reason of Estate, Naturalization is, in order, first and precedent to Union of Laws; in degree, a less matter then Union of Laws; and in nature, separable, not inseparable, from Union of Laws. For, Naturalization doth but take out the marks of a Forraigner; but Union of Laws makes them entirely as our selves: Naturalization taketh away separation, but Union of Laws doth take away distinction. Do we not see (Mr. Speaker) that in the administration of the world, under the great Monarch, God himself, that His Laws are divers; one Law in Spirits, another in Bodies; One Law in Regions Coelestial, another Elementary; And yet the Creatures are all one Mass and Lump, without any vacuum or separation? Do we not see likewise, in the State of the Church, that amongst people of all Languages and Linages, there is one Communion of Saints; and that we are all fellow Citizens, and naturalized of the Heavenly Hierusalem: And yet, nevertheless, divers and several Ecclesiastical Laws, Policies and

Hierarchies? According to the Speech of that worthy Father, In veste varietas sit, scissura non sit. And therefore, certainly (Mr. Speaker) the Bond of Law is the more special and private Bond; and the Bond of Naturalization the more common and general. For the Laws are rather Figura Reip. then Forma; and rather Bonds of Perfection, then Bonds of Entireness. And therefore, we see in the experience of our own Government, that in the Kingdom of Ireland, all our Statute-Laws, since Poyning-Laws, are not in force; and yet we deny them not the benefit of Naturalization. In Gersey, Guernsey and the Isle of Man, our Common Laws are not in force; and yet they have the benefit of Naturalization. Neither need any man doubt, but that our Laws and Customs must in small time gather and win upon theirs. For, here's the Seat of the Kingdom, whence come the supreme Directions of Estate; Here is the Kings Person and Example, of which the Verse saith,

Regis ad exemplum tot us componitur Orbis.

And therefore, it is not possible, although not by solemn and formal Act of Estates, yet by the secret operation of no long time, but they will come under the yoke of our Laws; and so, Dulcis tractus pari jugo. And this is the Answer I give to this second Objection.

The third Objection is, some inequality in the Fortunes of these two Nations, England and Scotland; By the commixture whereof, there may ensue advantage to them, and loss to us: Wherein (Mr. Speaker) it is well, that this difference or disparity consisteth but in external Goods of Fortune. For indeed, it must needs be confessed, that for the Goods of the Mind and Body, they are Alteri Nos, Other our selves. For, to do them but right, we know in their capacity and understanding, they are a People ingenious; in Labour industrious; in Courage valiant; in Body hard, active and comely. More might be said, but in commending them, we do but in effect commend our selves: for they are of one piece and continent with us; and the truth is, we are participant both of their Virtues and Vices. For, if they have been noted to be a Pople not so tractable in Government, we cannot without flattering our selves, free our selves altogether from that fault, being a thing indeed incident to all Martial People. As we see it

evident by the example of the Romans and others: Even like unto fierce Horses, that though they be of better service then others, yet are they harder to guide and to mannage.

But for this Objection (Mr. Speaker) I purpose to answer it, not by Authority of Scripture, which saith, Beatius est dare quam accipere; but by an Authority, framed and derived from the judgement of our selves and our Ancestors, in the same case as to this point. For (Mr. Speaker) in all the Line of our Kings, none useth to carry greater commendation then his Majesties Noble Progenitour, King Edward, the first of that Name: And amongst his other commendations both of War and Policy, none is more celebrated then his purpose and enterprise for the Conquest of Scotland; as not bending his designs to glorious Acquests abroad, but to solid strength at home: which nevertheless, if it had succeeded well, could not but have brought in all those inconveniences, of the commixture of a more opulent Kingdom, with a less, that are now alledged. For it is not the yoke either of our Armes or of our Laws, that can alter the nature of the Climate, or the nature of the Soil: Neither is it the manner of the commixture, that can alter the matter of the commixture. And therefore (Mr. Speaker) if it were good for us then, it is good for us now; and not to be prised the less because we paid not so dear for it. But a more full Answer to this Objection, I refer over to that which will come after to be spoken, touching Surety and Greatness.

The fourth Objection (Mr. Speaker) is not properly an Objection, but rather a pre-occupation of an Objection of the other side: For it may be said, and very materially, whereabout do we contend? The benefit of Naturalization is by the Law, in as many as have been, or shall be born since his Majesties coming to the Crown, already settled and invested. There is no more then, but to bring the Ante-nati into the degree of the Post-nati; that men grown that have well-deserved, may be in no worse case then children which have not deserved; and elder brothers in no worse case then younger brothers. So as we stand upon Quiddam, not Quantum; being but a little difference of time, of one Generation from another.

To this (Mr. Speaker) it is said by some, that the Law is not so, but that the Post-nati are Aliens as well as the rest. A point that I mean not much to argue; both because it hath been well spoken to, by the Gentleman that spoke last before me; and because I do desire in this case and in this place, to speak rather of Convenience than of Law. Only this will I say, That that opinion seems to me contrary to reason of Law, contrary to form of pleading in Law, and contrary to Authority and Experience of Law. For reason of Law, when I meditate of it, Methinks the wisdom of the Common Laws of England, well observed, is admirable, in the distribution of the benefit and protection of the Laws, according to the several conditions of persons, in an excellent proportion. The degrees are four, but bipartite; Two of Aliens, and two of Subjects. The first degree is of an Alien, born under a King or State that is an enemy. If such an one come into this Kingdom without safe conduct, it is at his peril: The Law giveth him no protection, neither for Body, Lands nor Goods; So as if he be slain, there is no remedy by any Appeal at the parties sute, although his Wife were an English woman: Marry at the Kings sute the case may be otherwise, in regard of the offence to the Peace. The second degree, is of an Alien that is born under the Faith and Allegiance of a King or State that is a friend. Unto such a person, the Law doth impart a greater benefit and protection; that is, concerning things personal, transitory and moveable; as Goods and Chattels, Contracts and the like: But not concerning Freehold and Inheritance: And the reason is, because he may be an enemy, though he be not. For the State, under the obeysance of which he is, may enter into quarrel and hostility; and therefore, as the Law hath but a transitory assurance of him, so it rewards him but with transitory benefits. The third degree is of a Subject, who having been an Alien, is by Charter made Denizen. To such an one, the Law doth impart yet a more ample benefit: For, it gives him power to purchase Freehold and Inheritance to his own use, and likewise enables the Children, born after his Denization, to inherit: But yet, nevertheless, he cannot make Title, or convey Pedegree from any Ancestour Paramount. For the Law thinks not good to make him in the same degree with a Subject born; because he was once an Alien, and so mought once have been an

enemy. And Nemo subitò fingitur: Mens affections cannot be so settled by any benefit, as when from their Nativity they are inbred and inherent. And the fourth degree, which is the perfect degree, is of such a person that neither is enemy, nor can be enemy in time to come, nor could have been enemy at any time past; And therefore, the Law gives unto him the full benefit of Naturalization. Now (Mr. Speaker) if these be the true steps and paces of the Law, no man can deny, but whosoever is born under the Kings Obedience, never could, in aliquo puncto temporis, be an enemy; (a Rebel he mought be, but no Enemy) And therefore, in reason of Law, is naturalized: Nay, contrary-wise, he is bound, Jure Nativitatis, to defend this Kingdom of England against all Invaders or Rebels: And therefore, as he is oblieged to the protection of Arms, and that perpetually and universally; So he is to have the perpetual and universal benefit and protection of Law, which is Naturalization.

For form of Pleading, it is true, that hath been said, That if a man would plead another to be an Alien, he must not only set forth negatively and privatively, that he was born out of the obedience of our Soveraign Lord the King, but affirmatively, under the obedience of a forreign King or State in particular; which never can be done in this case.

As for Authority, I will not press it; you know all what hath been published by the Kings Proclamations.

And for experience of Law, we see it in the Subjects of Ireland, in the Subjects of Gersey and Guernsey, parcels of the Dutchy of Normandy; in the Subjects of Calleis (when it was English) which was parcel of the Crown of France. But, as I said, I am not willing to enter into an Argument of Law, but to hold my self to point of Convenience.

So as for my part, I hold all Post-nati naturalized, ipso jure. But yet, I am far from opinion, that it should be a thing superfluous to have it done by Parliament; chiefly, in respect of that true principle, Principum Actiones praecipuè ad famam sunt componendae. It will lift up a Sign to all the world, of our love towards them, and good agreement with them. And these are (Mr. Speaker) the matterial Objections which have been made of the other side, whereunto you have heard

mine Answers: Weigh them in your wisdoms. And so I conclude that general part.

Now (Mr. Speaker) according as I promised, I must fill the other ballance, in expressing unto you the inconveniencies which we shall incur, if we shall not proceed to this Naturalization: Wherein, that inconvenience, which of all others and alone by it self, if there were none other, doth exceedingly move me, and may move you, is a Position of Estate, collected out of the Records of time; which is this, That wheresoever several Kingdoms or Estates have been united in Soveraignty, if that Union hath not been fortified and bound in with a further Union, and namely that which is now in question, of Naturalization; this hath followed, That at one time or other they have broken again, being upon all occasions apt to revolt, and relapse to the former separation.

Of this assertion, the first example which I will set before you, is of that memorable Union which was between the Romans and the Latines, which continued from the Battail at the Lake of Regilla, for many years, untill the Consulships of T. Manlius and P. Decius. At what time, there began about this very point of Naturalization, that War which was called, Bellum Sociale; being the most bloody and pernicious War, that ever the Roman State endured; wherein, after numbers of Battails, and infinite Sieges and Surprises of Towns, the Romans in the end prevailed, and mastered the Latines. But assoon as ever they had the honour of the War, looking back into what perdition and confusion they were near to have been brought, they presently naturalized them all. You speak of a Naturalization in blood; there was a Naturalization indeed in blood.

Let me set before you again, the example of Sparta, and the rest of Peloponnesus their Associats. The State of Sparta was a nice and jealous State in this point, of imparting Naturalization to their Confederates: But what was the issue of it? After they had held them in a kind of Society and Amity for divers years, upon the first occasion given (which was no more, then the surprize of the Castle of Thebes, by certain desperate Conspirators in the habit of Masquers) There ensued immediatly a general revolt and defection of their Associats; which was the ruine of their State, never afterwards to be recovered.

Of later time, let me lead your consideration to behold the like events in the Kingdom of Arragon; which Kingdom was united with Castille and the rest of Spain, in the persons of Ferdinando and Isabella, and so continued many years; But yet so, as it stood a Kingdom severed and divided from the rest of the Body of Spain in Priviledges; and directly in this point of Naturalization, or capacity of Inheritance. What came of this? Thus much; That now of fresh memory, not past twelve years since, only upon the voice of a condemned man, out of the Grate of a Prison towards the Street, that cried, Fueros, (which is as much as Liberties, or Priviledges) There was raised a dangerous Rebellion, which was suppressed with difficulty with an Army Royal, and their Priviledges disannulled, and they incorporated with the rest of Spain. Upon so small a spark, notwithstanding so long continuance, were they ready to break and severe again.

The like may be said of the States of Florence and Pisa; which City of Pisa being united unto Florence, but not endued with the benfite of Naturalization, upon the first light of forraign Assistance, by the expedition of Charles the eighth of France into Italy, did revolt; though it be since again re-united and incorporated.

The same effect we see in the most barbarous Government; which shews it the rather to be an effect of Nature. For, it was thought a fit Policy by the Council of Constantinople, to retain the three Provinces of Transilvania, Valachia and Moldavia, (which were as the very Nurses of Constantinople, in respect of their Provisions) to the end, they moght be the less wasted, only under Vayvods as Vaslals and Homagers, and not under Bassa's and Provinces of the Turkish Empire; which Policy we see, by late experience, proved unfortunate, as appeared by the revolt of the same three Provinces, under the Arms and conduct of Sigismund Prince of Transilvania, a Leader very famous for a time; which Revolt is not yet fully recovered. Whereas we seldom or never hear of revolts of Princes incorporate to the Turkish Empire.

On the other part (Mr. Speaker) because it is true which the Logicians say, Opposita, juxta se posita, magis elucescunt: let us take a view and we shall find, That wheresoever Kingdoms and States have been united, and that Union

corroborate by the Bond of mutual Naturalization; you shall never observe them afterwards, upon any occasion of trouble or otherwise, to break and severe again: As we see most evidently before our eyes, in divers Provinces of France; that is to say, Guien, Provence, Normandy, Brittain, which, notwithstanding the infinite infesting troubles of that Kingdom, never offered to break again.

We see the like effect in all the Kingdoms of Spain, which are mutually naturalized; As Leon, Castile, Valencia, Andaluzia, Granada and the rest; except Arragon, which held the contrary course, and therefore had the contrary successe, as we said; and Portugal, of which there is not yet sufficient Trial.

And lastly, we see the effect in our own Nation, which never rent assunder, after it was once united; so as we now scarce know whether the Heptarchy were a Story or a Fable. And therefore (Mr. Speaker) when I revolve with my self these examples and others, so lively expressing the necessity of a Naturalization, to avoid a relapse into a separation, and do hear so many arguments and scruples made on the other side; It makes me think on the old Bishop, which upon a publick Disputation of certain Divines, Christians, with some learned men of the Heathens, did extremely press to be heard; and they were loath to suffer him, because they knew he was unlearned, though otherwise an holy and well-meaning Man: But at last, with much ado, he got to be heard; and when he came to speak, in stead of using Arguments, he did only say over his Belief; but did it with such assurance and constancy, as did strike the minds of those that heard him, more then any Argument had done. And so (Mr. Speaker) against all these witty and subtile Arguments, I say that I do believe, and would be sorry to be found a Prophet in it, That except we proceed with this Naturalization (though not perhaps in his Majesties time, who hath such Interest in both Nations) yet in the time of his Descendants, these Realms will be in continual danger to divide and break again. Now if any man be of that careless mind,

—— Maneat nostras ca cura Nepotes;

Or of that hard mind, to leave things to be tryed by the sharpest Sword; sure I am, he is not of St. Paul's opinion, who affirmeth, That whosoever useth not fore-sight and provision for his Family, is worse then an unbeliever: Much more,

if we shall not use fore-sight for these two Kingdoms, that comprehend so many Families, but leave things open to the peril of future divisions. And thus have I expressed unto you, the inconvenience which of all other sinketh deepest with me, as the most weighty.

Neither do their want other inconveniences (Mr. Speaker) the effect and influence whereof, I fear, will not be adjourned to so long a day, as this that I have spoken of. For, I leave it to your wisdom to consider, whether you do not think, in case by the denyal of this Naturalization, any pike of alienation or unkindness (I do not say where) should be thought to be, or noised to be, between these two Nations, whether it will not quicken and excite all the envious and malicious humours wheresoever (which are now covered) against us, either forraign or at home; and so open the way to practices and other engines and machinations, to the disturbance of this State? As for that other inconvenience of his Majesties engagement into this Action, it is too binding and pressing to be spoken of, and may do better a great deal in your minds, then in my mouth, or in the mouth of any man else; because, I say, it doth press our Liberty too far. And therefore (Mr. Speaker) I come now to the third general part of my division, concerning the Benefits which we shall purchase, by this knitting of the knot surer and streighter between these two Kingdoms, by the communicating of Naturalization.

The Benefits may appear to be two; the one Surety, the other Greatness. Touching Surety (Mr. Speaker) it was well said by Titus Quintius the Roman, touching the State of Peloponnesus, That the Tortois is safe within her shell; Testudo intra tegumen tuta est; but if there be any parts that lye open, they endanger all the rest. We know well, that although the State at this time, be in a happy Peace; yet, for the time past, the more ancient enemy to this Kingdom hath been the French, and the more late the Spaniard; and both these had, as it were, their several postern Gates, whereby they mought have approach and entrance to annoy us. France had Scotland, and Spain had Ireland. For these were the two accesses which did comfort and encourage both these enemies, to assail and trouble us. We see that of Scotland is cut off, by the Union of both

these Kingdoms, if that it shall now be made constant and permanent. That of Ireland is likewise cut off, by the convenient situation of the North of Scotland toward the North of Ireland, where the sore was: Which we see, being suddainly closed, hath continued closed by means of this Salve; So as now, there are no parts of this State exposed to danger, to be a temptation to the ambition of Forraigners, but the approaches and avenues are taken away. For, I do little doubt, but those Forraigners, which had so ill success when they had these advantages, will have much less comfort now, that they be taken from them. And so much for Surety.

For Greatness (Mr. Speaker) I think a man may speak it soberly, and without bravery; That this Kingdom of England, having Scotland united, Ireland reduced, the Sea Provinces of the Low-Countreys contracted, and Shipping maintained, is one of the greatest Monarchies in Forces, truly esteemed, that hath been in the world. For certainly, the Kingdoms here one Earth, have a resemblance with the Kingdom of Heaven; which our Saviour compareth, not to any great Kernel or Nut, but to a very small Grain; yet such an one, as is apt to grow and spread. And such, do I take to be, the constitution of this Kingdom; if indeed we shall refer our Counsels to Greatness and Power, and not quench them too much with consideration of Utility and Wealth. For (Mr. Speaker) was it not, think you, a true Answer that Solon of Greece made to the rich King Cresus of Lydia, when he shewed unto him a great quantity of Gold that he had gathered together, in ostentation of his Greatness and Might? But Solon said unto him, contrary to his expectation; Why, Sir, if another come that hath better Iron then you, he will be Lord of all your Gold. Neither is the Authority of Machiavel to be despised, who scorneth the Proverb of Estate, taken first from a Speech of Mucianus, That Moneys are the Sinews of War; And saith, There are no true Sinews of War, but the very Sinews of the Arms of valiant men. Nay more (Mr. Speaker) whosoever shall look into the seminaries and beginnings of the Monarchies of the world, he shall find them founded in Poverty. Persia, a Countrey barren and poor, in respect of the Medes whom they subdued. Macedon, a Kingdom ignoble and mercenary, until the time of Philip, the Son of

Amyntas. Rome had poor and pastoral beginnings. The Turks, a Band of Sarmatian Scythes, that in a vagabond manner, made impression upon that part of Asia, which is yet called Turcomania. Out of which, after much variety of Fortune, sprung the Ottoman Family, now the terrour of the world. So we know the Goths, Vandals, Alanes, Huns, Lombards, Normans, and the rest of the Northern people, in one Age of the world made their descent or expedition upon the Roman Empire; And came not as Rovers, to carry away prey and be gone again, but planted themselves in a number of fruitful and rich Provinces; where not only their Generations, but their Names, remain till this day: witness Lombardy, Catalonia, a name compounded of Goth and Alane; Andaluzia, a name corrupted from Vandelicia; Hungary, Normandy and others. Nay, the fortune of the Swizzes of late years, (which ate bred in a barren and mountainous Countrey) is not to be forgotten, who first ruined the Duke of Burgandy, the same who had almost ruined the Kingdom of France; what time, after the Battail of Granson, the Rich Jewel of Burgandy, prized at many thousands, was sold for a few pence by a common Souldier, that knew no more what a Jewel meant, then did Aesops Cock. And again, the same Nation, in revenge of a scorn, was the ruine of the French Kings Affairs in Italy, Lewis the 12th. For, that King, when he was pressed somewhat rudely by an Agent of the Swizzes to raise their Pensions, brake into words of choller, What (said he) will these Villains of the Mountains put a Tax upon me? which words lost him his Dutchy of Millain, and chased him out of Italy. All which examples (Mr. Speaker) do well prove Solons opinion, of the Authority and Mastery that Iron hath over Gold. And therefore, if I shall speak unto you mine own heart, Methinks we should a little disdain, that the Nation of Spain (which, howsoever of late it hath grown to Rule, yet of ancient time served many Ages, first, under Carthage, then under Rome, after under Saracens, Goths and others) should of late years, take unto themselves that Spirit, as to dream of a Monarchy in the West, according to that devise, Video Solem Orientem in Occidente; only because they have ravished from some wild and unarmed People, Mines and store of Gold: And on the other side, that this Island of Brittany, seated and manned as it is, and that hath (I make no question)

the best Iron in the world, (that is, the best Souldiers of the world) should think of nothing but reckonings and audits, and Meum and Tuum, and I cannot tell what.

Mr. Speaker, I have (I take it) gone through the Parts which I propounded to my self; Wherein, if any man shall think that I have sung Placebo, for mine own particular, I would have him know, that I am not so unseen in the world, but that I discern it were much alike, for my private Fortune, to rest a Tacebo, as to sing a Placebo, in this Business. But I have spoken out of the Fountain of my Heart, Credidi, propter quod locutus sum; I believed therefore I spake. So as my Duty is performed, the Judgement is yours. God direct it for the best.

A SPEECH USED BY SIR FRANCIS BACON IN THE LOWER HOUSE OF PARLIAMENT, BY OCCASION OF A MOTION CONCERNING THE UNION OF LAWS.

AND it please you (Mr. Speaker) were it now a time to wish, as it is to advise, no man should be more forward or more earnest then my self in this wish, That his Majesties Subjects of England and Scotland were governed by one Law; And that for many Reasons:

First, because it will be an infallible assurance, that there will never be any relapse in succeeding Ages to a separation.

Secondly, Dulcis tractus pari jugo; If the Draught lye most upon us, and the yoke lightest upon them, it is not equal.

Thirdly, the Qualities, and (as I may term it) the Elements of their Laws and ours are such, as do promise an excellent temperature in the compounded Body: For if the Prerogative here be too indefinite, it may be the Liberty there is too unbounded: If our Laws and proceedings be too prolix and formal; it may be theirs are too informal and summary.

Fourthly, I do discern, to my understanding, there will be no great difficulty in this work. For their Laws, by that I can learn, compared with ours, are like their Language compared with ours: For, as their Language hath the same roots that ours hath, but hath a little more mixture of Latine and French; So their Laws and Customs have the like grounds that our have, with a little more mixture of the Civil Law, and French Customs.

Lastly, the mean to this work seemeth to me no less excellent then the work it self; For if both Laws shall be united, it is of necessity, for preparation and inducement thereunto, that our own Laws be reviewed and compiled; Then the which, I think, there cannot be a work that his Majesty can undertake, in these

times of Peace, more Politick, more Honourable, nor more Beneficial to his Subjects for all Ages;

Pace datâ Terris, Animum ad Civilia vertit
Fura suum, Legesque tulit justissimus Auctor.

For this continual heaping up of Laws, without digesting them, maketh but a Chaos and confusion, and turneth the Laws many times, to become but snares for the People, as is said in the Scripture, Pluet super eos Laqueos. Now, Non sunt pejores Laquei, quam Laquei Legum: And therefore, this work, I esteem to be indeed a work (rightly to term it) Heroical. So that for this good wish of Union of Laws, I do consent to the full; And I think, you may perceive by that which I have said, that I come not in this to the opinion of others, but that I was long ago settled in it my self. Nevertheless, as this is moved out of zeal, so I take it to be moved out of time, as commonly zealous motions are; while men are so fast carried on to the End, as they give no attention to the Mean. For, if it be time to talk of this now, it is either because the business now in hand cannot proceed without it; or because in time and order, this matter should be precedent; or because we shall leese some advantage, towards this effect so much desired, if we should go on in the course we are about. But none of these three, in my judgement, are true; And therefore, the motion, as I said, unseasonable.

For first, that there may not be a Naturalization, without an Union in Laws, cannot be maintained. Look into the example of the Church, and the Union thereof, you shall see several Churches that joyn in one Faith, one Baptism, (which are the points of spiritual Naturalization) do many times in Policy, Constitutions and Customs, differ. And therefore, one of the Fathers made an excellent observation, upon the two Mysteries; the one, that in the Gospel, where the Garment of Christ is said to have been without seam; the other, that in the Psalm, where the Garment of the Queen is said to have been of divers colours; And concludeth, In veste variet as sit, scissura non sit. So in this case, (Mr. Speaker) we are now in hand to make this Monarchy of one piece, and not of one colour. Look again into the examples of forraign Countries, and take that next us of France; and there you shall find, that they have this distribution, Pais

du droit Escript, and Pais du droit Constumier. For Gascoign, Languedock, Provence, Daulphenie, are Countries governed by the Letter or Text of the Civil Law; But the Isle of France, Tourrain, Berry, Anjou and the rest, and most of all Britain and Normandy, are governed by Customs, which amount unto a Municipal Law, and use the Civil Law but only for Grounds, and to decide new and rare cases; and yet, nevertheless, Naturalization passeth through all.

Secondly, that this Union of Laws should precede the Naturalization, or that it should go on, pari passu, hand in hand, I suppose likewise can hardly be maintained; but the contrary, that Naturalization ought to precede. Of which my opinion, as I could yield many reasons, so because all this is but a digression, and therefore ought to be short, I will hold my self now only to one, which is briefly and plainly this; That the Union of Laws will ask a great time to be perfected, both for the compiling, and for the passing; dureing all which time, if this mark of Strangers should be denyed to be taken away, I fear it may induce such a habit of Strangeness, as will rather be an impediment than a preparation to further proceeding. For he was a wise man that said, Opportuni magnis conatibus transitus Rerum. And in those cases, Non progredi est regredi. And like, as in a pair of Tables, you must put out the former writing, before you can put in new; and again, that which you write in, you write Letter by Letter; but that which you put out, you put out at once: So we have now to deal with the Tables of mens Hearts, wherein it is in vain to think you can enter the willing acceptance of our Laws and Customs; except you first put forth all Notes either of Hostility or forraign Condition. And these are to be put out simul & semel, at once, without gradations; whereas the other points are to be imprinted and engraven distinctly and by degrees.

Thirdly, whereas it is conceived by some, that the communication of our Benefits and Priviledges is a good hold that we have over them, to draw them to submit themselves to our Laws. It is an Argument of some probability, but yet to be answered many wayes: For first, the intent is mistaken, which is not, as I conceive it, to draw them wholly to a subjection to our Laws; but to draw both Nations to one uniformity of Law. Again, to think that there should be a kind of

articulate and indented Contract, that they should receive our Laws to obtain our Priviledges, it is a matter, in reason of Estate, not to be expected; being that which scarcely a private man will acknowledge, if it come to that, whereof Seneca speaketh, Beneficium accipere, est Libertatem vendere: No, but courses of Estate do describe and delineat another way; which is, to win them either by Benefit or Custom. For, we see in all Creatures, that men do feed them first, and reclaim them after: And so in the first institution of Kingdoms, Kings did first win people by many Benfits and Protections, before they prest any yoke. And for Custom, which the Poets call, imponere Morem; who doubts, but that the Seat of the Kingdom, and the example of the King resting here with us, our manners will quickly be there, to mak all things ready for our Laws:

And lastly, the Naturalization which is now propounded, is qualified with such restrictions, as there will be enough kept back, to be used at all times, for an Adamant of drawing them further on to our desires. And therefore, to conclude, I hold this motion, of Union of Laws, very worthy, and arising from very good minds, but not proper for this time.

To come therefore to that which is now in question; It is no more, but whether there should be a difference made in this priviledge of Naturalization, between the Ante-nati and the Postnati; not in point of Law (for that will otherwise be decided) but only in point of Convenience [as if a Law were now to be made, de novo] In which question, I will at this time, only answer two Objections, and use two Arguments, and so leave it to your judgement.

The first Objection hath been, that if a difference should be, it ought to be in favour of the Ante-nati; because they are persons of merit, service and proof; whereas the Postnati are infants, that (as the Scripture saith) know not the right hand from the left.

This were good reason (Mr. Speaker) if the question were, of Naturalizing some particular persons by a private Bill; but it hath no proportion with the general. For now, we are not to look to respects that are proper to some, but to those which are common to all. Now then, how can it be imagined, but that those that took their first breath, since this happy Union, inherent in his Majesties

person, must be more assured and affectionat to this Kingdom, then those generally can be presumed to be, which were sometimes Strangers. For, Nemo subitò fingitur; the conversions of Minds are not so swift as the conversions of times. Nay, in effects of Grace, which exceed far the effects of Nature, we see St. Paul makes a difference between those he calls Neophites, that is, newly grafted into Christianity; and those that are brought up in the Faith. And so we see, by the Laws of the Church, that the Children of Christians shall be baptized, in regard of the Faith of their Parents; But the Child of an Ethnick may not receive Baptism, till he be able to make an understanding Profession of his Faith.

Another Ojection hath been made, that we ought to be more provident and reserved, to restrain the Postnati then the Ante-nati; because, during his Majesties time, being a Prince of so approved Wisdom and Judgement, we need no better caution, then the confidence we may repose in him: But in the future Reigns of succeeding ages, our caution must be in Re, and not in Persona.

But, (Mr. Speaker) to this I answer, That as we cannot expect a Prince hereafter, less like to erre in respect of his Judgement; So again, we cannot expect a Prince so like to exceed (if I may so term it) in this point of Benificence to that Nation, in respect of the occasion. For, whereas all Princes and all men are won, either by merit or conversation, there is no appearance that any of his Majesties Descendents, can have either of these causes of Bounty towards that Nation, in so ample degree as his Majesty hath. And these be the two Objections which seemed to me most material, why the Postnati should be left free, and not be concluded in the same restrictions with the Ante-nati, whereunto you have heard the Answers.

The two Reasons which I will use on the other side, are briefly these; The one being a Reason of Common Sense, the other a Reason of Estate. We see (Mr. Speaker) the time of the Nativity is, in most cases, principally regarded. In Nature, the time of planting and setting is chiefly observed. And we see, the Astrologers pretend to judge of the fortune of the party, by the time of the Nativity. In Laws, we may not unfitly apply the case of Legitimation, to the case of Naturalization. For, it is true, that the common Canon Law doth put the Ante-

natos and the Post-natos in one degree; But when it was moved to the Parliament of England, Barones unâ voce responderunt, Nolumus Leges Angliae mutare. And though it must be confessed, that the Ante-nati and Postnati are in the same degree in Dignities, yet were they never so in Abilities: For, no man doubts, but the Son of an Earl or Baron, before his Creation or Call, shall inherite the Dignity, as well as the Son born after.

But the Son of an Attainted Person, born before the Attainder, shall not inherite as the after-born shall, notwithstanding Charter of Pardon.

The Reason of Estate is, That any restriction of the Ante-nati is temporary, and expireth with this Generation: But if you make it in the Postnati also, you do but in substance, pen a perpetuity of Separation.

Mr. Speaker, in this point I have been short, because I little expected this doubt, as to point of Convenience; and therefore, will not much labour, where, I suppose, there is no greater opposition.

A BRIEF DISCOURSE, OF THE HAPPY UNION OF THE KINGDOMES OF ENGLAND AND SCOTLAND.

Dedicated in private to His MAJESTY.

I Do not find it strange (excellent King) that when Heraclitus (he that was surnamed, the Obscure) had set forth a certain Book (which is not now extant) many men took it for a Discourse of Nature, and many others took it for a Treatise of Policy. For there is a great affinity and consent between the Rules of Nature, and the true Rules of Policy. The one being nothing else, but an Order in the Government of the World; And the other, an Order in the Government of an Estate. And therefore, the education and erudition of the Kings of Persia was in a Science, which was termed by a Name then of great Reverence; but now degenerate, and taken in the ill part. For the Perasin Magick, which was the secret Literature of their Kings, was an application of the Contemplations and Observations of Nature, unto a sense Politick; taking the fundamental Laws of Nature, and the Branches and Passages of them, as an Original or first Model, whence to take and describe a Copy and Imitation for Government.

After this manner, the foresaid Instructers set before their Kings, the examples of the Celestial Bodies, the Sun, the Moon and the rest, which have great glory and veneration, but no rest or intromission, being in a perpetual office of motion, for the cherishing (in turn and in course) of inferiour Bodies: Expressing likewise the true manner of the motions of Government; which though they ought to be swift and rapide, in respect of dispatch and occasions; yet are they to be constant and regular, without wavering or confusion.

So did they represent unto them, how the Heavens do not enrich themselves by the Earth and the Sea; nor keep no dead Stock nor untouched Treasures of that they draw to them from below: But whatsoever moisture they do levy and take from both Elements in vapours, they do spend and turn back again in

showers; only holding and storing them up for a time, to the end, to issue and distribute them in season.

But, chiefly, they did expresse and expound unto them, that fundamental Law of Nature, whereby all things do subsist and are preserved; which is, that every thing in Nature, although it hath his private and particular affection and appetite, and doth follow and pursue the same in small moments, and when it is free and delivered from more general and common respects; yet, neverthelesse, when there is question or case, for sustaining of the more general, they for sake their own particularities, and attend and conspire to uphold the publick.

So we see, the Iron, in small quantity, will ascend and approach to the Load-stone, upon a particular sympathy; But, if it be any quantity of moment, it leaveth his appetite of amity to the Load-stone, and like a good Patriot, falleth to the Earth; which is the Place and Region of massy Bodies.

So again, the Water, and other like Bodies, do fall towards the Center of the Earth, which is (as was said) their Region or Countrey: And yet, we see nothing more usual in all Water-works and Engines, then that the Water (rather then to suffer any distraction or dis-union in Nature) will ascend, for saking the love to his own Region or Countrey, and applying it self to the Body next adjoyning.

But, it were too long a digression to proceed to more examples of this kind. Your Majesty your self, did fall upon a passage of this nature, in your gracious Speech of thanks unto your Council; when acknowledging Princely, their vigilancies and well-deservings, it pleased you to note, that it was a success and event above the course of nature, to have so great Change, with so great a Quiet; Forasmuch as suddain mutations, as well in State as in Nature, are rarely without violence and perturbation. So as still I conclude, there is (as was said) a congruity between the principles of Nature and Policy. And lest that instance may seem to oppone to this Assertion, I may, even in that particular, with your Majesties favour, offer unto you a Type or Pattern in Nature, much resembling this event in your State: Namely Earthquakes, which many of them bring ever much terrour and wonder, but no actual hurt; the Earth trembling for a moment, and suddenly stablishing in perfect quiet, as it was before.

This knowledge then, of making the Government of the World a mirrour for the Government of a State, being a Wisdom almost lost (whereof the reason I take to be, because of the difficulty for one man to imbrace both Philosophies) I have thought good to make some proof (as far as my weakness, and the straights of my time will suffer) to revive in the handling of one particular, wherewith now I most humbly present your Majesty: For surely, as hath been said, it is a form of Discourse anciently used towards Kings; And to what King should it be more proper, then to a King that is studious to conjoin contemplative Vertue and active Vertue together?

Your Majesty is the first King that had the Honour to be Lapis Angularis, to unite these two mighty and warlike Nations of England and Scotland, under one Soveraignty and Monarchy. It doth not appear, by the Records and Memories of any true History, or scarcely by the fiction and pleasure of any fabulous Narration or Tradition, That ever, of any Antiquity, this Island of Great Britain was united under one King before this day. And yet there be no Mountains or races of Hills, there be no Seas nor great Rivers, there is no diversity of Tongue or Language, that hath invited or provoked this ancient Separation or Divorce. The lot of Spain was, to have the several Kingdoms of that Continent (Portugal only except) to be united in an Age not long past; and now in our Age, that of Portugal also, which was the last that held out, to be incorporate with the rest. The lot of France hath been, much about the same time, likewise to have re-annexed unto that Crown, the several Dutchies and Portions which were in former times dismembred. The lot of this Island is the last, reserved for your Majesties happy times, by the special Providence and Favour of God; who hath brought your Majesty to this happy conjunction with great consent of Hearts, and in the strength of your Years, and in the maturity of your Experience. It resteth but, that (as I promised) I set before your Majesties Princely consideration, the grounds of Nature touching the Union and Commixture of Bodies; and the correspondence which they have with the grounds of Policy, in the conjunction of States and Kingdoms.

First, therefore, that Position, Vis unita fortior, being one of the common notions of the Mind, needeth not much to be induced or illustrate.

We see the Sun, when he entereth, and while he continueth, under the Sign of Leo, causeth more vehement heats then when he is in Cancer; what time, his Beams are nevertheless more perpendicular. The reason whereof, in great part, hath been truly ascribed to the conjunction and corradiation, in that place of Heaven, of the Sun, with the four Stars of the first magnitude; Syrius, Canicula, Cor Leonis, and Cauda Leonis.

So the Moon likewise, by ancient tradition, while she is in the same Sign of Leo, is said to be at the Heart; which is not for any affinity which that place of Heaven can have with that part of mans Body; but only, because the Moon is then, by reason of the conjunction and nearness with the Stars aforenamed, in the greatest strength of influence; and so worketh upon that part in inferiour Bodies, which is most Vital and Principal.

So we see, Waters and Liquors, in small quantity, do easily putrifie and corrupt; but in large quantity, subsist long, by reason of the strength they receive by union.

So in Earthquakes, the more general do little hurt, by reason of the united weight which they offer to subvert; but narrow and particular Earthquakes have many times overturned whole Towns and Cities.

So then, this point, touching the force of Union, is evident. And therefore, it is more fit to speak of the manner of Union; wherein again, it will not be pertinent to handle one kind of Union, which is Union by Victory, when one Body doth meerly subdue another, and converteth the same into his own nature, extinguishing and expulsing what part soever of it it cannot overcome. As when the Fire converteth the Wood into Fire, purging away the smoak and the ashes, as unapt Matter to enflame: Or, when the Body of a Living Creature doth convert and assimilate Food and Nourishment, purging and expelling whatsoever it cannot convert. For, these Representations do answer, in matter of Policy, to Union of Countries by conquest, where the conquering State doth extinguish, extirpate and expulse any part of the State conquered, which it findeth so

contrary, as it cannot alter and convert it. And therefore, leaving violent Unions, we will consider only of natural Unions.

The difference is excellent, which the best Observers in Nature do take between Compositio and Mistio, putting together and mingling; the one being but a conjunction of Bodies in place, the other in quality and consent; the one the Mother of Sedition and Alteration; the other of Peace and Continuance; the one rather a Confusion then an Union, the other properly an Union. Therefore, we see those Bodies, which they call imperfectè mista, last not, but are speedily dissolved. For, take for example, Snow or Froath, which are compositions of Air and Water, and in them you may behold, how easily they severe and dissolve, the Water closing together and excluding the Air.

So those three Bodies, which the Alchymists do so much celebrate, as the three Principles of things; that is to say, Earth, Water and Oyl, (which it pleaseth them to term, Salt, Mercury and Sulphur) we see, if they be united only by composition or putting together, how weakly and rudely they do incorporate: For Water and Earth maketh but an unperfect slime; and if they be forced together by agitation, yet by a little settling, the Earth resideth in the bottom. So Water and Oyl, though by agitation it be brought into an Oyntment; yet, after a little settling, the Oyl will float on the top: So as such imperfect mistures continue no longer then they are forced; and still in the end, the worthiest getteth above.

But otherwise it is of perfect mistures. For we see these three Bodies of Earth, Water and Oyl, when they are joined in a Vegetable or Mineral, they are so united, as without great subtilty of Art and force of Extraction, they cannot be separated and reduced into the same simple Bodies again. So as the difference between Compositio and Mistio, clearly. set down is this; That Compositio is the joining or putting together of Bodies, without a new Form; and Mistio is the joining or putting together of Bodies, under a new Form. For, the new form is commune Vinculum; and without that, the old Form will be at strife and discord.

Now, to reflect this Light of Nature upon matter of Estate: There hath been put in practice, these two several kinds of Policy, in uniting and conjoining of States and Kingdoms: The one to retain the ancient Form still severed, and only

conjoined in Soveraignty; The other to superinduce a new Form, agreeable and convenient to the entire State. The former of these hath been more usual, and is more easie; but the latter is more happy. For, if a man do attentively revolve Histories of all Nations, and judge truly thereupon, he will make this conclusion, That there was never any States that were good commixtures, but the Romans. Which because it was the best State of the World, and is the best Example of this Point, we will chiefly insist thereupon.

In the Antiquities of Rome, Virgil bringeth in Jupiter by way of Oracle or Prediction, speaking of the mixture of the Trojans and the Italians:

Sermonem Ausonii Patrum, moresque tenebant,
Utque est nomen erit; Commixti Corpore tantum,
Subsident Teucri, Morem, Ritusque Sacrorum,
Adjiciam; faciamque omnes uno ore Latinos.
Hinc genus Ausonio mistum, quod sanguine surget,
Supra Homines, supra ira Deos, pietate videbis.

Wherein Jupiter maketh a kind of partition or distribution, That Italy should give the Language and the Laws; Troy should give a mixture of Men, and some Religious Rites; and both people should meet in one name of Latines.

Soon after the foundation of the City of Rome, the people of the Romans and the Sabines mingled upon equal terms. Wherein the interchange went so even, that (as Livy noteth) the one Nation gave the Name to the Place, the other to the People. For, Rome continued the name, but the people were called Quirites; which was the Sabine word, derived of Cures, the Countrey of Tatius.

But that which is chiefly to be noted, in the whole continuance of the Roman Government, they were so liberal of their Naturalizations, as in effect, they made perpetual mixtures. For the manner was, to grant the same, not only to particular Persons, but to Families and Linages; and not only so, but to whole Cities and Countries. So as in the end, it came to that, that Rome was communis Patria, as some of the Civilians call it.

So we read of Saint Paul, after he had been beaten with Rods, and thereupon charged the Officer with the violation of the Priviledge of a Citizen of Rome; The Captain said to him, Art thou then a Romane? That Priviledge hath cost me dear. To whom Saint Paul replyed, But I was so born. And yet in another place, Saint Paul professeth himself that he was a Jew by Tribe: So as it is manifest, that some of his Ancestors were naturalized; and so it was conveyed to him and their other descendants.

So we read, that it was one of the first despites that was done to Julius Casar; That whereas he had obtained Naturalization for a City in Gaule, one of the City was beaten with Rods of the Consul Marcellus.

So we read in Tacitus, that in the Emperor Claudius time, the Nation of Gaule, (that part which is called Comata, the wilder part) were Suiters to be made capable of the honour of being Senators and Officers of Rome. His words are these: Cum de supplendo Senatu agitaretur, primoresque Galliae, quae Comata appellatur, faedera & Civitatem Romanam pridem assecuti, Jus adipiscendorum in urbe Honorum, expeterent; multus, eâsuper re, variusque Rumor, & studiis diversis, apud Principem, certabatur. And in the end, after long debate, it was ruled they should be admitted.

So likewise, the Authority of Nicholas Matchiavel seemeth not to be contemned; who enquiring the causes of the growth of the Roman Empire, doth give Judgement, there was not one greater then this, That the State did so easily compound and incorporate with Strangers.

It is true, that most Estates and Kingdoms have taken the other course. Of which this effect hath followed, That the addition of further Empire and Territory hath been rather matter of Burthen then matter of Strength unto them: yea, and further, it hath kept alive the seeds and roots of Revolts and Rebellions for many Ages: As we may see, in a fresh and notable Example of the Kingdom of Arragon; which though it were united to Castile by Marriage, and not by Conquest, and so descended in hereditary Union, by the space of more then one hundred years; yet, because it was continued in a divided Government, and not

well incorporated and cemented with the other Crowns; entred into a Rebellion, upon point of their Fueros, or Liberties, now of very late years.

Now, to speak briefly of the several parts of that form, whereby States and Kingdoms are perfectly united, they are (besides the Soveraignty it self) four in number; Union in Name, Union in Language, Union in Laws, Union in Employments.

For Name, though it seem but a superficial and outward matter, yet it carrieth much impression and enchantment: The general and common name of Grecia made the Greeks alwayes apt to unite (though otherwise full of divisions amongst themselves) against other Nations, whom they called Barbarous. The Helvetian Name is no small Band, to knit together their Leagues and Confederacies the faster. The common Name of Spain (no doubt) hath been a special means of the better Union and Conglutination of the several Kingdoms of Castile, Aragon, Granada, Navarrc, Valentia, Catalonia and the rest; comprehending also now lately Portugal.

For Language, it is not needful to insist upon it, because both your Majesties Kingdoms are of one Language, though of several Dialects; and the difference is so small between them, as promiseth rather an enriching of one Language, then a continuance of two.

For Laws, which are the principal Sinews of Government, they be of three natures; Jura, which I will term Freedoms or Abilities, Leges and Mores.

For Abilities and Freedoms, they were amongst the Romans of four kinds, or rather degrees. Jus Connubii, Jus Civitatis, and Jus Suffragii, Jus Petitionis, or Honoram. Jus Connubii is a thing in these times, out of use; for Marriage is open between all diversities of Nations. Jus Civitatis answereth to that we call Denization or Naturalization. Jus Suffragii answereth to the Voice in Parliament. Jus Petitionis answereth to place in Council or Office. And the Romans did many times severe these Freedoms, granting Jus Connubii, sine Civitate; And Civitatem, sine suffragio; And Suffragium, sine Jure Petitionis, which was commonly with them the last.

For those we called Leges, it is a matter of curiosity and inconveniency, to seek either to extirpate all particular Customs, or to draw all Subjects to one place or resort of Judicature and Session. It sufficeth there be an uniformity in the Principal and Fundamental Laws, both Ecclesiastical and Civil: For in this point, the Rule holdeth which was pronounced by an ancient Father, touching the diversity of Rites in the Church; For, finding the Vesture of the Queen in the Psalm (which did prefigure the Church) was of divers colours; and finding again, that Christs Coat was without a seam, he concludeth well, In Veste varietas sit, scissura non sit.

For Manners, a consent in them is to be sought industriously, but not to be enforced: For nothing amongst people breedeth so much pertinacy in holding their Customs, as suddain and violent offer to remove them.

And as for Employments, it is no more but in indifferent hand, and execution of that Verse,

Tyrôs, Triusque mihi nullo discrimine agetur.

There remaineth only to remember, out of the grounds of Nature, the two conditions of perfect mixture; whereof the former is Time. For the Natural Philosophers say well, that Compositio is opus Hominis; and Mistio, opus Naturae. For it is the duty of Man, to make a fit application of Bodies together: But the perfect fermentation and incorporation of them, must be left to Time and Nature; and unnatural hasting thereof, doth disturb the work, and not dispatch it.

So we see, after the Graft is put into the Stock and bound, it must be left to Time and Nature to make that continuum, which at the first was but contiguum. And it is not any continual pressing or thrusting together that will prevent Natures season, but rather hinder it. And so in Liquors, those commixtures which are at the first troubled, grow after clear and settled, by the benefit of rest and time.

The second condition is, That the greater draw the less. So we see, when two Lights do meet, the greater doth darken and dim the less. And when a smaller River runneth into a greater, it loseth both his Name and Stream. And hereof, to conclude, wee see an excellent example in the Kingdoms of Judah and Israel.

The Kingdom of Judah contained two Tribes; the Kingdom of Israel contained ten: King David raigned over Judah for certain years; And after the death of Isbosheth, the Son of Saul obtained likewise the Kingdom of Israel. This Union continued in him, and likewise in his Son Salomon, by the space of seventy years at least, between them both: But yet, because the Seat of the Kingdom was kept still in Judah, and so the lesse sought to draw the greater; upon the first occasion offered, the Kingdoms brake again, and so continued ever after.

Thus having, in all humbleness, made oblation to your Majesty of these simple Fruits of my Devotion and Studies; I do wish, and do wish it, not in the nature of an impossibility (to my apprehension) That this happy Union of your Majesties two Kingdoms of England and Scotland, may be in as good an hour, and under the like Divine Providence, as that was between the Romans and the Sabines.

CERTAIN ARTICLES OR CONSIDERATIONS, TOUCHING THE UNION OF THE KINGDOMS OF ENGLAND AND SCOTLAND.

Collected and dispersed for His MAJESTIES better Service.

YOur Majesty being (I do not doubt) directed and conducted by a better Oracle, then that which was given for light to Aeneas in his peregrination, (Antiquam exquirite Matrem) hath a Royal, and indeed an Heroical desire, to reduce these two Kingdoms of England and Scotland, into the Unity of their ancient Mother Kingdom of Britain. Wherein, as I would gladly applaud unto your Majesty, or sing aloud that Hymn or Anthem, Sic itur ad Astra; So in a more soft and submiss voice, I must necessarily remember unto your Majesty, that Warning or Caveat, Ardua, quae pulchra; It is an action that requireth, yea, and needeth much, not only of your Majesties Wisdom, but of your Felicity. In this Argument, I presumed, at your Majesties first entrance, to write a few Lines indeed Scholastically and Speculatively, and not Actively or Politickly, as I held it fit for me at that time, when neither your Majesty was, in that your desire, declared, nor my self in that Service, used or trusted. But now, that both your Majesty hath opened your desire and purpose, with much admiration, even of those who give it not so full an approbation; and that my self was by the Commons, graced with the first Vote of all the Commons, selected for that Cause; Not in any estimation of my ability (for therein so wise an Assembly could not be so much deceived) but in an acknowledgement of my extream labours and integrity in that business, I thought my self every wayes bound, both in duty to your Majesty, and in trust to that House of Parliament, and in consent to the matter it self, and in conformity to my own travails and beginnings; not to neglect any pains that may tend to the furtherance of so excellent a work: Wherein I will indeavour, that that which I shall set down be Nihil minus quam verba: For length and ornament of Speech are to be used for perswasion of

Multitudes, and not for information of Kings; especially such a King, as is the only instance that ever I knew, to make a man of Plato's opinion, That all knowledge is but remembrance, and that the mind of Man knoweth all things, and demandeth only to have her own Notions excited and awaked. Which your Majesties rare and indeed singular gift and faculty of swift apprehension, and infinite expansion or multiplication of another mans knowledge by your own, as I have often observed, so I did extremely admire in Goodwins Cause, being a matter full of Secrets and Mysteries of our Laws, meerly new unto you, and quite out of the path of your Education, Reading and Conference: Wherein, nevertheless, upon a spark of light given, your Majesty took in so dexterously and profoundly, as if you had been indeed Anima Legis, not only in execution, but in understanding: The remembrance whereof, as it will never be out of my mind, So it will alwayes be a warning to me, to seek rather to excite your Judgement briefly, then to inform it tediously; and if in a matter of that nature, how much more in this, wherein your Princely cogitations have wrought themselves and been conversant, and wherein the principal Light proceeded from your Self.

And therefore, my purpose is only to break this matter of the Union into certain short Articles and Questions; and to make a certain kind of Anatomy or Analysis of the Parts and Members thereof; not that I am of opinion, that all the Questions which I now shall open, were fit to be in the Consultation of the Commissioners propounded. For I hold nothing so great an enemy to good resolution, as the making of too many questions; specially in Assemblies, which consist of many. For Princes, for avoiding of distraction, must take many things by way of admittance; and if questions must be made of them, rather to suffer them to arise from others, then to grace them and authorize them, as propounded from themselves. But unto your Majesties private consideration, to whom it may better sort with me, rather to speak as a Remembrancer, then as a Counceller, I have thought good to lay before you, all the Branches, Lineaments and Degrees of this Union, that upon the view and consideration of them and their circumstances, your Majesty may the more clearly discern, and more readily call

to mind, which of them is to be imbraced, and which to be rejected; And of these which are to be accepted, which of them is presently to be proceeded in, and which to be put over to further time; And again, which of them shall require Authority of Parliament, and which are fitter to be effected by your Majesties Royal Power and Prerogative, or by other Policies or Means; And lastly, which of them is liker to pass with difficulty and contradiction, and which with more facility and smoothness:

First therefore, to begin with that Question, that I suppose will be out of question.

Whether it be not meet, that the Statutes which were made touching Scotland, or the Scots Nation, while the Kingdoms stood severed, be repealed?

It is true, there is a diversity in these; For some of these Laws consider Scotland as an Enemy Countrey; Other Laws consider it, as a Forraign Countrey only: As for example, the Law of Rich. 2. Anno 70. which prohibiteth all Armour or Victual to be carried to Scotland; And the Law of 70. of K. H. the 7. that Enacteth all the Scots Men to depart the Realm, within a time prefixed; Both these Laws and some others, respect Scotland as a Countrey of hostility: But the Law of 22. of Ed. 4. that endueth Barwick with the Liberty of a Staple, where all Scots Merchandizes should resort, that should be uttered for England; And likewise all English Merchandizes that should be uttered for Scotland: This Law beholdeth Scotland only as a Forraign Nation, and not so much neither; for there have been erected Staples in Towns in England for some Commodities, with an exclusion and restriction of other parts of England.

But this is a matter of the least difficulty; your Majesty shall have a Calendar made of the Laws, and a Brief of the Effect, and so you may judge of them: And the like, or reciproque, is to be done by Scotland, for such Laws as they have concerning England and the English Nation.

The second Question is, what Laws, Customs, Commissions, Officers, Garrisons and the like, are to be put down, discontinued or taken away, upon the Borders of both Realms?

This point, because I am not acquainted with the Orders of the Marches, I can say the less.

Herein falleth that question, Whether that the Tennants, who hold their Tennant-Rights in a greater freedom and exemption, in consideration of their service, upon the Borders; and that the Countreys themselves, which are in the same respect, discharged of Subsidies and Taxes, should not now be brought to be in one degree with other Tennants and Countreys? Nam cessante causâ, tollitur effectus; wherein, in my opinion, some time would be given, Quia adhuc corum Messis in herbâ est: But some present Ordinance would be made, to take effect at a future time; considering it is one of the greatest points and marks of the division of the Kingdoms. And because Reason doth dictate, that where the principal Solution of Continuity was, there the healing and consolidating Plaister should be chiefly applyed; There would be some further device, for the utter and perpetual confounding of those imaginary Bounds (as your Majesty termeth them) And therefore, it would be considered, whether it were not convenient to plant and erect at Carleil or Barwick, some Council or Court of Justice, the Jurisdiction whereof might extend part into England, and part into Scotland; With a Commission, not to proceed precisely, or meerly according to the Laws and Customs either of England or Scotland, but mixtly, according to Instructions by your Majesty to be set down, after the imitation and precedent of the Council of the Marches here in England, erected upon the Union of Wales.

The third Question is, that which many will make a great question of, though perhaps, your Majesty will make no question of it; And that is, Whether your Majesty should not make a stop, or stand here, and not to proceed to any further Union, contenting your Self with the two former Articles or Points?

For it will be said, That we are now well (thanks be to God) and your Majesty and the State of neither Kingdom is to be repented of; And that it is true which Hippocrates saith, That, Sana Corpora difficilè medicationes ferunt; It is better to make alterations in sick Bodies, then in found. The consideration of which point, will rest upon these two Branches; What inconveniencies will ensue with time, if the Realms stand as they are divided, which are yet not found nor sprung up. For

it may be, the sweetness of your Majesties first entrance, and the great Benefit that both Nations have felt thereby, hath covered many inconveniencies; Which nevertheless, be your Majesties Government never so gracious and politick, continuance of time and the accidents of time may breed and discover, if the Kingdoms stand divided.

The second Branch is, Allow no manifest or important peril or inconvenience should ensue, of the continuing of the Kingdoms divided; yet, on the other side, whether that, upon the further uniting of them, there be not like to follow that addition and encrease of Wealth and Reputation, as is worthy your Majesties Vertues and Fortune to be the Author and Founder of, for the advancement and exaltation of your Majesties Royal Posterity, in time to come.

But, admitting that your Majesty should proceed to this more perfect and entire Union, wherein your Majesty may say, Majus opus moveo; To enter into the parts and degrees thereof, I think fit, first, to set down, as in a brief Table, in what points the Nations stand now at this present time already united, and in what points yet still severed and divided; that your Majesty may the better see what is done, and what is to be done; and how that which is to be done, is to be inferred upon that which is done.

The Points wherein the Nations stand already united are,

In Soveraignty.

In the Relative thereof, which is Subjection.

In Religion.

In Continent.

In Language.

And now lastly, by the Peace your Majesty concluded with Spain in Leagues and Confederacies; For now both Nations have the same Friends and the same Enemies.

Yet notwithstanding, there is none of the six Points wherein the Union is perfect and consummate; But every of them hath some scruple, or rather grain of separation, enwrapped and included in them.

For the Soveraignty, the Union is absolute in your Majesty and your Generation; But if it should so be, (which God of his infinite mercy defend) that your Issue should fail, then the descent of both Realms doth resort to the several Lines of the several Blouds Royal.

For Subjection, I take the Law of England to be clear, (what the Law of Scotland is, I know not) That all Scots men, from the very instant of your Majesties Reign begun, are become Denizens; And the Post-nati are naturalized Subjects of England, for the time forwards: For, by our Laws, none can be an Alien, but he that is of another Allegiance then our Soveraign Lord the Kings; For there be but two sorts of Aliens, whereof we find mention in our Law; an Alien Ami, and an Alien Enemy; whereof the former is a Subject of a State in amity with the King, and the latter a Subject of a State in hostility: But, whether he be one or other, it is an essential difference unto the definition of an Alien, if he be not of the Kings Allegiance; As we see it evidently in the precedent of Ireland, who since they were Subjects to the Crown of England, have ever been inheritable and capable, as Natural Subjects; And yet, not by any Statute or Act of Parliament, but meerly by the common Law, and the Reason thereof. So as there is no doubt, that every Subject in Scotland was and is in like plight and degree, since your Majesties coming in, as if your Majesty had granted particularly your Letters of Denization or Naturalization to every of them, and the Post-nati wholly Natural. But then, on the other side, for the time backwards, and for those that were Ante-nati, the Blood is not by Law naturalized; So as they cannot take it by descent from their Ancestors, without Act of Parliament. And therefore, in this point, there is a defect in the Union of Subjection.

For matter of Religion, the Union is perfect in points of Doctrine; but in matter of Discipline and Government, it is imperfect.

For the Continent; It is true, there are no natural Boundaries of Mountains or Seas, or Navigable Rivers; But yet there are Badges and Memorials of Borders: Of which point, I have spoken before.

For the Language; It is true, the Nations are unius Labii, and have not the first curse of disunion, which was Confusion of Tongues, whereby one understood

not another: But yet the Dialect is differing, and it remaineth a kind of mark of distinction. But for that, Tempori permittendum, it is to be left to time: For, considering that both Languages do concur in the principal Office and Duty of Language, which is to make a mans self understood; For the rest, it is rather to be accounted (as was said) a diversity of Dialect then of Language; and as I said in my first Writing, it is like to bring forth the enriching of one Language, by compounding and taking in the proper and significant Words of either Tongue, rather then a continuance of two Languages.

For Leagues and Confederacies; It is true, that neither Nation is now in hostility with any State, wherewith the other Nation is in amity: but yet so, as the Leagues and Treaties have been concluded with either Nation respectively, and not with both jointly; which may contain some diversity of Articles of straitness with one, more then with the other.

But many of these matters may perhaps be of that kind, as may fall within that Rule, In veste variet as sit, scissura non sit.

Now to descend to the particular points, wherein the Realms stand severed and divided, over and besides the former six points of separation, which I have noted and placed as the defects or abatements of the six points of the Union, and therefore shall not need to be repeated. The points, I say, yet remaining, I will divide into External and into Internal.

The External Points therefore of the separation, are four.

1. The several Crowns; I mean, the ceremonial and material Crowns.
2. The second is, the several Names, Stiles or Appellations.
3. The third is, the several Prints of the Seals.
4. The fourth is, the several Stamps or Marks of the Coins of Monies.

It is true, that the External are, in some respect and parts, much mingled and interlaced with considerations Internal; and that they may be as effectual to the true Union, which must be the work of time, as the Internal, because they are operative upon the conceits and opinions of the People: The uniting of whose hearts and affections, is the life and true end of this Work.

For the Ceremonial Crowns, the question will be, whether there shall be framed one new Imperial Crown of Britain, to be used for the time to come?

Also, admitting that to be thought convenient, whether in the Frame thereof, there shall not be some reference to the Crowns of Ireland and France?

Also, whether your Majesty should repeat or iterate your own Coronation and your Queens; or only ordain, that such new Crown shall be used by your Posterity hereafter?

The difficulties will be, in the conceit of some inequality, whereby the Realm of Scotland may be thought to be made an accession unto the Realm of England. But that resteth in some circumstances; for the compounding of the two Crowns is equal; The calling of the new Crown, The Crown of Britain, is equal. Only the place of Coronation, if it shall be at Westminster, which is the ancient, august and sacred place for the Kings of England, may seem to make an inequality: And again, if the Crown of Scotland be discontinued, then that Ceremony which I hear is used in the Parliament of Scotland, in the absence of the Kings, to have the Crowns carried in solemnity, must likewise cease.

For the Name, the main question is, whether the contracted Name of Britain shall be by your Majesty used, or the divided Names of England and Scotland.

Admitting there shall be an alteration, then the case will require these following Questions.

First, whether the Name of Britain shall not only be used in your Majesties Stile, where the entire Stile is recited; and in all other forms, the divided Names to remain, both of the Realms and of the People; Or otherwise, that the very divided Names of Realms and People, shall likewise be changed or turned into special or sub-divided Names of the general Name; That is to say, for example, whether your Majesty in your Stile, shall denominate your self, King of Britain, France and Ireland, &c. And yet, nevertheless, in any Commission, Writ or otherwise, where your Majesty mentioneth England or Scotland, you shall retain the ancient Names, as Secundum consuetudinem Regni nostri Angliae; or whether those divided Names shall be for ever lost and taken away, and turned into the sub-divisions of South-Britain and North-Britain, and the People to be

South-Britains and North-Britains; And so in the example foresaid, the Tenour of the like clause to run, Secundum consuetudinem Britanniae Australis.

Also, if the former of these shall be thought convenient, whether it were not better for your Majesty, to take that Alteration of Stile upon you by Proclamation, as Edward the third did the Stile of France, then to have it enacted by Parliament?

Also, in the alteration of the Stile, whether it were not better to transpose the Kingdom of Ireland, and put it immediately after Britain, and so place the Islands together; and the Kingdom of France, being upon the Continent, last? In regard these Islands of the Western Ocean seem, by Nature and Providence, an entire Empire in themselves; and also, that there was never King of England so entirely possest of Ireland as your Majesty is: So as your Stile to run, King of Britain, Ireland, and the Islands adjacent, and of France, &c.

The difficulties in this have been already throughly beaten over, but they gather but to two Heads.

The one, point of Honour, and love to the former Names.

The other, Doubt; left the alteration of the Name may induce and involve an alteration of the Laws and Policies of the Kingdom: Both which, if your Majesty shall assume the Stile by Proclamation, and not by Parliament, are in themselves satisfied: For then the usual Names must needs remain in Writs and Records; the Forms whereof cannot be altered, but by Act of Parliament, and so the point of Honour satisfied. And again, your Proclamation altereth no Law; and so the scruple of a tacite or implyed alteration of Laws likewise satisfied. But then, it may be considered, whether it were not a Form of the greatest Honour, if the Parliament, though they did not enact it, yet should become Suiters and Petitioners to your Majesty to assume it?

For the Seals, That there should be but one Great Seal of Britain, and one Chancellor; and that there should only be a Seal in Scotland for Processes and ordinary Justice; And that all Patents of Grants of Lands or otherwise, as well in Scotland as in England, should pass under the Great Seal here, kept about your Person: It is alteration Internal whereof I do not now speak.

But the Question in this place is, whether the Great Seals of England and Scotland should not be changed into one and the same form of Image and Superscription of Britain? which nevertheless is requisite should be, with some one plain or manifest alteration, lest there be a Buz, and suspect that Grants of things in England may be passed by the Seal of Scotland; Or è converso.

Also, whether this alteration of Form may not be done without Act of Parliament, as the Great Seals have used to be heretofore changed, as to their Impressions?

For the Moneys, as to the Real and internal consideration thereof, the question will be, Whether your Majesty should not continue two Mints? which (the distance of Territory considered) I suppose, will be of necessity.

Secondly, how the Standards (if it be not already done, as I hear some doubt made of it in popular rumour) may be reduced into an exact proportion for the time to come; and likewise the computation, tale, or valuation to be made exact, for the Moneys already beaten?

That done, the last Question is, (which is only proper to this place) whether the Stamp, or the Image and Superscription of Britain, for the time forwards, should not be made the self same in both places, without any difference at all? A matter also which may be done, as our Law is, by your Majesties Prerogative, without Act of Parliament.

These points are points of Demonstration, ad faciendum Populum; But so much the more they go to the root of your Majesties intention, which is to imprint and inculcate into the Hearts and Heads of the People, that they are one People and one Nation.

In this kind also, I have heard it pass abroad in speech, of the erection of some new Order of Knighthood, with a Reference to the Union, and an Oath appropriat thereunto; which is a point likewise deserveth a Consideration. So much for the External Points.

The Internal Prints of Separation, are as followeth.

1. Several Parliaments.

2. Several Councils of Estate.
3. Several Officers of the Crown.
4. Several Nobilities.

5. Several Laws.
6. Several Courts of Justice, Trials and Processes.
7. Several Receipts and Finances.
8. Several Admiralties and Merchandizings.
9. Several Freedoms and Liberties,
10. Several Taxes and Imposts.

As touching the several States Ecclesiastical, and the several Mints and Standards, and the several Articles and Treaties of Intercourse with Forraign Nations, I touched them before.

In these points, of the straight and more inward Union, there will interveen one principal difficulty and impediment, growing from that root, which Aristotle in his Politicks, maketh to be the root of all division and diffention in Common-wealths; And that is, Equality and Inequality. For the Realm of Scotland is now an Ancient and Noble Realm, substantive of it self: But, when this Island shall be made Britain, then Scotland is no more to be considered as Scotland, but as a part of Britain; no more then England is to be considered as England, but as a part likewise of Britain: And consequently, neither of these are to be considered as things entire in themselves, but in the proportion that they bear to the whole. And therefore, let us imagine (Nam id Mente possumus, quod Actu non possumus) that Britain had never been divided, but had ever been one Kingdom; then that part of Soil or Territory, which is comprehended under the name of Scotland, is in quantity (as I have heard it esteemed, how true I know not) not past a third part of Britain; And that part of Soil or Territory which is comprehended under the name of England, is two parts of Britain; leaving to speak of any difference of Wealth or Population, and speaking only of Quantity. So then, if for example, Scotland should bring to Parliament as much Nobility as England, then a third part should countervail two parts, Nam si inaequalibus

aequalia addas, omnia erunt inaequalia. And this, I protest before God and your Majesty, I do speak, not as a man born in England, but as a man born in Britain. And therefore, to descend to particulars.

1. Parliament.

For the Parliaments, the consideration of that Point will fall into four Questions.

1. The first, what proportion shall be kept between the Votes of England, and the Votes of Scotland.

2. The second, touching the manner of Proposition, or possessing of the Parliament of Causes there to be handled, which in England is used to be done immediately by any Member of the Parliament, or by the Prolocutor; and in Scotland is used to be done immediately by the Lords of the Articles; whereof the one form seemeth to have more Liberty, and the other more Gravity and Maturity: And therefore, the Question will be, whether of these shall yield to other? Or, whether there should not be a mixture of both by some Commissions, precedent to every Parliament, in the nature of Lords of the Articles; and yet, not excluding the Liberty of propounding in full Parliament afterwards?

3. The third, touching the Orders of Parliament, how they may be compounded, and the best of either taken.

4. The fourth, how those, which by inheritance or otherwise, have Offices of Honour and Ceremony in both the Parliaments, as the Lord Steward with us, &c. may be satisfied, and duplicitly accommodated?

2. Councils of Estate.

For the Councils of Estate, while the Kingdoms stand divided, it should seem necessary to continue several Councils; But if your Majesty should proceed to a strict Union then, howsoever your Majesty may establish some Provincial Councils in Scotland, as there is here of York, and in the Marches of Wales; Yet the Question will be, whether it will not be more convenient for your Majesty, to have but one Privy Council about your Person; whereof the principal Officers of

the Crown of Scotland to be, for Dignity sake, howsoever their abiding and remaining may be as your Majesty shall imploy their Service? But this point belongeth meerly and wholly to your Majesties Royal Will and Pleasure.

3. Officers of the Crown.

For the Officers of the Crown, the consideration thereof will fall into these Questions.

First, in regard of the latitude of your Kingdom, and the distance of place, whether it will not be matter of necessity to continue the several Officers, because of the impossibility for the Service to be performed by one?

The second, admitting the duplicity of Officers should be continued, yet whether there should not be a difference, that one should be the principal Officer, and the other to be but special and subalterne? As for example, one to be Chancellor of Britain, and the other to be Chancellor, with some special addition; As here of the Dutchy, &c.

The third, if no such specialty or inferiority be thought fit, then whether both Officers should not have the Title and the Name of the whole Island and Precincts? As the Lord Chancellor of England, to be Lord Chancellor of Britain, and the Lord Chancellor of Scotland, to be Lord Chancellor of Britain; But with several Proviso's, that they shall not intromit themselves, but within their several Precincts.

4. Nobilities.

For the Nobilities, the consideration thereof will fall into these Questions.

The first, of their Votes in Parliament (which was touched before) what proportion they shall bear to the Nobility of England? Wherein, if the proportion which shall be thought fit be not full, yet your Majesty may, out of your Prerogative, supply it: For, although you cannot make fewer of Scotland, yet you may make more of England.

The second is, touching the Place and Precedence; wherein, to marshal them according to the Precedence of England in your Majesties Stile, and according to the Nobility of Ireland, that is, all English Earls first, and then Scots, will be thought unequal for Scotland: To marshal them according to Antiquity, will be thought unequal for England, because, I hear their Nobility is generally more ancient: And therefore, the Question will be, whether the indifferentest way were not, to take them interchangeably; As for example, first the ancient Earl of England, and then the ancient Earl of Scotland: And so Alternis vicibus.

5. Laws.

For the Laws, to make an entire and perfect Union, it is a matter of great difficulty and length, both in the collecting of them, and in the passing of them. For, first, as to the collecting of them, there must be made by the Lawyers of either Nation, a Disgest, under Titles, of their several Laws and Customs, as well Common Laws, as Statutes; that they may be collated and compared, and that the diversities may appear and be discerned of. And for the passing of them, we see by experience, that Patrius Mos, is dear to all men, and that men are bred and nourished up in the love of it; and therefore, how harsh Changes and Innovations are. And we see likewise, what Disputation and Argument the alteration of some one Law doth cause and bring forth; How much more the alteration of the whole Corps of the Law? Therefore, the first Question will be, whether it be not good to proceed by parts, and to take that that is most necessary, and leave the rest to time? The parts therefore, or subject of Laws, are for this purpose, fitliest distributed, according to that ordinary didivision of Criminal and Civil; and those of Criminal Causes, into Capital and Penal.

The second Question therefore is, Allowing the general Union of Laws to be too great a Work to embrace, whether it were not convenient, that Cases Capital were the same in both Nations? I say the Cases, I do not speak of the Proceedings or Trials; That is to say, whether the same Offences were not fit to be made Treason or Fellony in both places?

The third Question is, whether Cases Penal, though not Capital, yet if they concern the Publick State, or otherwise the discipline of Manners, were not fit likewise to be brought into one degree? As the case of Misprision of Treason, the Case of Premunire, the Case of Fugitives, the Case of Incest, the Case of Simony and the rest.

But the Question, that is more urgent then any of these, is, Whether these Cases, at the least, be they of an higher or inferiour degree, wherein the Fact committed or Act done in Scotland, may prejudice the State and Subjects of England, or è converso; are not to be reduced to one uniformity of Law and Punishment? As for example, a Perjury committed in a Court of Justice in Scotland, cannot be prejudicial in England, because Depositions taken in Scotland, cannot be produced and used here in England. But a Forgery of a Deed in Scotland, I mean with a false date of England, may be used and given in evidence in England. So likewise, the depopulating of a Town in Scotland, doth not directly prejudice the State of England: But if an English Merchant shall carry Silver and Gold into Scotland, (as he may) and thence transport it into Forraign Parts, this prejudiceth the State of England, and may be an evasion to all the Laws of England ordained in that case: and therefore, had need to be bridled with as severe a Law in Scotland, as it is here in England.

Of this kind, there are many Laws.

The Law of the 50. of Rich. the 2. of going over without Licence, if there be not the like Law in Scotland, will be frustrated and evaded: For any Subject of England, may go first into Scotland, and thence into Forraign parts.

So the Laws prohibiting transportation of sundry Commodities, as Gold and Silver, Ordnance, Artillery, Corn, & c. if there be not a correspondence of Laws in Scotland, will in like manner be deluded and frustrate: For any English Merchant or Subject may carry such Commodities first into Scotland, as well as he may carry them from Port to Port in England; And out of Scotland to Forraign parts, without any peril of Law.

So Libels may be devised and written in Scotland, and published and scattered in England.

Treasons may be plotted in Scotland, and executed in England.

And so in many other cases, if there be not the like severity of Law in Scotland, to restrain offences, that there is in England (whereof we are here ignorant, whether there be or no) it will be a gap or stop, even for English Subjects, to escape and avoid the Laws of England.

But for Treasons, the best is, that by the Statute of 26. King Hen. the 8th. Ca. any Treason committed in Scotland, may be proceeded with in England, as well as Treasons committed in France, Rome, or elsewhere.

6. Courts of Justice, and Administration of Laws.

For Courts of Justice, Trials, Processes, and other Administration of Laws, to make any alteration in either Nation, it will be a thing so new and unwonted to either People, that it may be doubted, it will make the Administration of Justice (which of all other things, ought to be known and certain, as a beaten way) to become intricate and uncertain: And besides, I do not see that the severalty of Administration of Justice, though it be by Court Soveraign of last resort, (I mean, without appeal or errour) is any impediment at all to the Union of a Kingdom: As we see by experience, in the several Courts of Parliament in the Kingdom of France. And I have been alwayes of opinion, that the Subjects of England do already fetch Justice somewhat far off, more then in any Nation that I know, the largeness of the Kingdom considered, though it be holpen in some part, by the Circuits of the Judges, and the two Councils at York, and in the Marches of Wales established.

But it may be a good Question, whether as commune vinculum, of the Justice of both Nations, your Majesty should not erect some Court about your Person, in the nature of the Grand Council of France; To which Court you might, by way of evocation, draw Causes from the ordinary Judges of both Nations; For so doth the French King from all the Courts of Parliament in France; many of which are more remote from Paris, then any part of Scotland is from London.

7. Receipts, Finances, and Patrimonies of the Crown.

For Receipts and Finances, I see no Question will arise; in regard it will be matter of necessity, to establish in Scotland a Receipt of Treasure, for Payments and Erogations to be made in those parts: And for the Treasure of Spare, in either Receipts, the custodies thereof may well be several; considering, by your Majesties Commandment, they may be at all times removed or disposed, according to your Majesties occasions.

For the Patrimonies of both Crowns, I see no Question will arise; except your Majesty would be pleased to make one compounded Annexation for an inseparable Patrimony to the Crown, out of the Lands of both Nations; And so the like for the Principality of Britain, and for other Appen•ages, of the rest of your Children; Erecting likewise such Dutchies and Honours, compounded of the Possessions of both Nations, as shall be thought fit.

8. Admiralty, Navy and Merchandizing.

For Admiralty or Navy, I see no great question will arise; For I see no inconvenience your Majesty to continue Shipping in Scotland. And for the Jurisdictions of the Admiralties, and the Profits and Casualties of them, they will be respective unto the Coasts over against which the Seas lye and are situated, As it is here with the Admiralties of England.

And for Merchandizing, it may be a question, whether that the Companies of the Merchant-Adventurers of the Turky Merchants and the Muscovy Merchants (if they shall be continued) should not be compounded of Merchants of both Nations, English and Scots? For, to leave Trade free in the one Nation, and to have it restrained in the other, may, per-case, breed some inconvenience.

9. Freedoms and Liberties.

For Freedoms and Liberties, the Charter of both Nations may be reviewed; And of such Liberties as are agreeable and convenient for the Subjects and People of both Nations, one Great Charter may be made and confirmed to the Subjects of

Britain; And those Liberties which are peculiar or proper to either Nation, to stand in State as they do.

10. Taxes and Imposts.

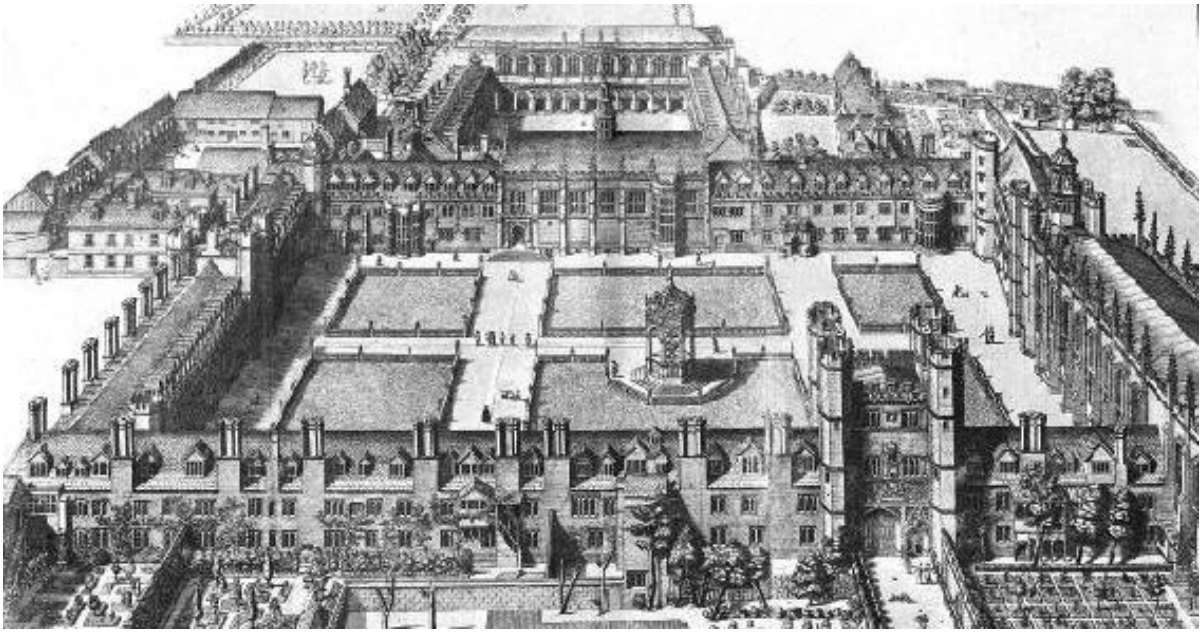
But for Imposts and Customs, it will be a great Question how to accommodate them, and reconcile them: For, if they be much easier in Scotland then they be here in England, (which is a thing I know not) then this inconvenience will follow, That the Merchants of England may unlade in the Ports of Scotland, and this Kingdom to be served from thence, and your Majesties Customs abated.

And for the Question, whether the Scots Merchants should pay Strangers Custom in England? That resteth upon the point of Naturalization, which I touched before.

Thus have I made your Majesty a brief and naked Memorial, of the Articles and Points of this great Cause; which may serve only to excite and stir up your Majesties Royal Judgement, and the Judgements of wiser men, whom you will be pleased to call to it: Wherein I will not presume to perswade, or disswade any thing, nor to interpose mine own opinion; but expect light from your Majesties Royal Directions, unto the which, I shall ever submit my Judgement, and apply my Travails. And I most humbly pray your Majesty, in this which is done, to pardon my errors, and to cover them with my good intention and meaning, and desire I have to do your Majesty service, and to acquit the Trust that was reposed in me; And chiefly, in your Majesties benign and gracious Acceptation.

FINIS.

The Criticism

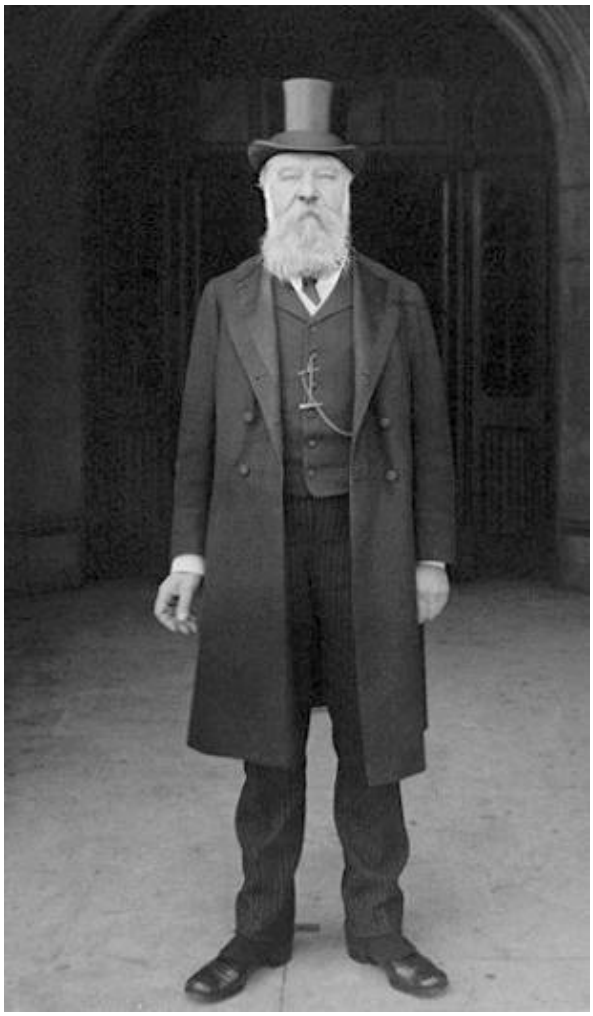


Trinity College, Cambridge, 1690. Bacon entered Trinity College, on 5 April 1573 at the age of 12, living there for three years, with his older brother Anthony Bacon, under the personal tutelage of Dr John Whitgift, future Archbishop of Canterbury.

Trinity College today

Bacon is Shake-Speare by Sir Edwin Durning-Lawrence

Sir Edwin Durning-Lawrence, 1st Baronet (1837-1914) was a British lawyer and Member of Parliament. He is best known for his advocacy of the Baconian theory of Shakespeare authorship, asserting that Francis Bacon was the author of Shakespeare's plays. Durning-Lawrence published a number of books on the subject and promoted public debates with the academic community. The most notable book on this subject was *Bacon is Shake-Speare* (1910). The most famous argument in the book suggests that the word *Honorificabilitudinitatibus*, used in the play *Love's Labour's Lost*, is an anagram for hi ludi, F. Baconis nati, tuiti orbi, Latin for "these plays, F. Bacon's offspring, are preserved for the world". He derived the argument from an earlier book by Isaac Hull Platt. The later critic Samuel Schoenbaum argued that the anagram overlooks the fact that Bacon would have written the genitive of his name as Baconi (from Baconus), never Baconis (which assumes his name was Baco).



Edwin Durning-Lawrence. M.P.

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PROMUS OF FOURMES AND ELEGANCYES
PREFACE TO PROMUS
PROMUS OF FORMULARIES.

“Every hollow Idol is dethroned by skill,
insinuation and regular approach.”

TO THE READER

The plays known as Shakespeare's are at the present time universally acknowledged to be the "Greatest birth of time," the grandest production of the human mind. Their author also is generally recognised as the greatest genius of all the ages. The more the marvellous plays are studied, the more wonderful they are seen to be.

Classical scholars are amazed at the prodigious amount of knowledge of classical lore which they display. Lawyers declare that their author must take rank among the greatest of lawyers, and must have been learned not only in the theory of law, but also intimately acquainted with its forensic practice. In like manner, travellers feel certain that the author must have visited the foreign cities and countries which he so minutely and graphically describes.

It is true that at a dark period for English literature certain critics denied the possibility of Bohemia being accurately described as by the sea, and pointed out the "manifest absurdity" of speaking of the "port" at Milan; but a wider knowledge of the actual facts has vindicated the author at the expense of his unfortunate critics. It is the same with respect to other matters referred to in the plays. The expert possessing special knowledge of any subject invariably discovers that the plays shew that their author was well acquainted with almost all that was known at the time about that particular subject.

And the knowledge is so extensive and so varied that it is not too much to say that there is not a single living man capable of perceiving half of the learning involved in the production of the plays. One of the greatest students of law publicly declared, while he was editor of the *Law Times*, that although he thought that he knew something of law, yet he was not ashamed to confess that he had not sufficient legal knowledge or mental capacity to enable him to fully comprehend a quarter of the law contained in the plays.

Of course, men of small learning, who know very little of classics and still less of law, do not experience any of these difficulties, because they are not able to perceive how great is the vast store of learning exhibited in the plays.

There is also shewn in the plays the most perfect knowledge of Court etiquette, and of the manners and the methods of the greatest in the land, a knowledge which none but a courtier moving in the highest circles could by any possibility have acquired.

In his diary, Wolfe Tone records that the French soldiers who invaded Ireland behaved exactly like the French soldiers are described as conducting themselves at Agincourt in the play of "Henry V," and he exclaims, "It is marvellous!" (Wolfe Tone also adds that Shakespeare could never have seen a French soldier, but we know that Bacon while in Paris had had considerable experience of them.)

The mighty author of the immortal plays was gifted with the most brilliant genius ever conferred upon man. He possessed an intimate and accurate acquaintance, which could not have been artificially acquired, with all the intricacies and mysteries of Court life. He had by study obtained nearly all the learning that could be gained from books. And he had by travel and experience acquired a knowledge of cities and of men that has never been surpassed.

Who was in existence at that period who could by any possibility be supposed to be this universal genius? In the days of Queen Elizabeth, for the first time in human history, one such man appeared, the man who is described as the marvel and mystery of the age, and this was the man known to us under the name of Francis Bacon.

In answer to the demand for a "mechanical proof that Bacon is Shakespeare" I have added a chapter shewing the meaning of "Honorificabilitudinitatibus," and I have in Chapter XIV. shewn how completely the documents recently discovered by Dr. Wallace confirm the statements which I had made in the previous chapters.

I have also annexed a reprint of Bacon's "Promus," which has recently been collated with the original manuscript. "Promus" signifies Storehouse, and the collection of "Fourmes and Elegancyes" stored therein was largely used by Bacon in the Shakespeare plays, in his own acknowledged works, and also in some other works for which he was mainly responsible.

I trust that students will derive considerable pleasure and profit from examining the “Promus” and from comparing the words and phrases, as they are there preserved, with the very greatly extended form in which many of them finally appeared.

EDWIN DURNING-LAWRENCE.

CHAPTER I.

"What does it matter whether the immortal works were written by Shakespeare (of Stratford) or by another man who bore (or assumed) the same name?"

Some twenty years ago, when this question was first propounded, it was deemed an excellent joke, and I find that there still are a great number of persons who seem unable to perceive that the question is one of considerable importance.

When the Shakespeare revival came, some eighty or ninety years ago, people said "pretty well for Shakespeare" and the "learned" men of that period were rather ashamed that Shakespeare should be deemed to be "*the*" English poet.

"Three poets in three distant ages born,
Greece, Italy and England did adorn,
. . . . . .
The force of Nature could no further go,
To make a third she joined the other two."

Dryden did not write these lines in reference to Shakespeare but to Milton. Where will you find the person who to-day thinks Milton comes within any measurable distance of the greatest genius among the sons of earth who was called by the name of Shakespeare?

Ninety-two years ago, viz.: in June 1818, an article appeared in *Blackwood's Edinburgh Magazine*, under the heading "Time's Magic Lantern. No. V. Dialogue between Lord Bacon and Shakspeare" [Shakespeare being spelled Shakspeare]. The dialogue speaks of "Lord" Bacon and refers to him as being engaged in transcribing the "Novum Organum" when Shakspeare enters with a letter from Her Majesty (meaning Queen Elizabeth) asking him, Shakspeare, to see "her own" sonnets now in the keeping of *her* Lord Chancellor.

Of course this is all topsy turvydom, for in Queen Elizabeth's reign
Bacon was never "Lord" Bacon or Lord Chancellor.

But to continue, Shakspeare tells Bacon “Near to Castalia there bubbles also a fountain of petrifying water, wherein the muses are wont to dip whatever posies have met the approval of Apollo; so that the slender foliage which originally sprung forth in the cherishing brain of a true poet becomes hardened in all its leaves and glitters as if it were carved out of rubies and emeralds. The elements have afterwards no power over it.”

Bacon. Such will be the fortune of your own productions.

Shakspeare. Ah my Lord! Do not encourage me to hope so. I am but a poor unlettered man, who seizes whatever rude conceits his own natural vein supplies him with, upon the enforcement of haste and necessity; and therefore I fear that such as are of deeper studies than myself, will find many flaws in my handiwork to laugh at both now and hereafter.

Bacon. He that can make the multitude laugh and weep as you do Mr. Shakspeare need not fear scholars…. More scholarship might have sharpened your judgment but the particulars whereof a character is composed are better assembled by force of imagination than of judgment….

Shakspeare. My Lord thus far I know, that the first glimpse and conception of a character in my mind, is always engendered by chance and accident. We shall suppose, for instance, that I, sitting in a taproom, or standing in a tennis court. The behaviour of some one fixes my attention…. Thus comes forth Shallow, and Slender, and Mercutio, and Sir Andrew Aguecheek.

Bacon. These are characters who may be found alive in the streets. But how frame you such interlocutors as Brutus and Coriolanus?

Shakspeare. By searching histories, in the first place, my Lord, for the germ. The filling up afterwards comes rather from feeling than observation. I turn myself into a Brutus or a Coriolanus for the time; and can, at least in fancy, partake sufficiently of the nobleness of their nature, to put proper words in their mouths…. My knowledge of the tongues is but small, on which account I have read ancient authors mostly at secondhand. I remember, when I first came to London, and began to be a hanger-on at the theatres, a great desire grew in me for more learning than had fallen to my share at Stratford; but fickleness and

impatience, and the bewilderment caused by new objects, dispersed that wish into empty air….

This ridiculous and most absurd nonsense, which appeared in 1818 in *Blackwood's Edinburgh Magazine* was deemed so excellent and so *instructive* that (slightly abridged) it was copied into "Reading lessons for the use of public and private schools" by John Pierpont, of Boston, U.S.A., which was published in London nearly twenty years later, viz., in 1837.

As I said before, the dialogue is really all topsy turvydom, for the writer must have known perfectly well that Bacon was not Lord Keeper till 1617, the year after Shakspeare's death in 1616, and was not made Lord Chancellor till 1618, and that he is not supposed to have began to write the "Novum Organum" before the death of Queen Elizabeth.

I have therefore arrived at the conclusion that the whole article was really intended to poke fun at the generally received notion that the author of the plays was an *un*lettered man, who picked up his knowledge at tavern doors and in taprooms and tennis courts. I would specially refer to the passage where Bacon asks "How frame you such interlocutors as Brutus and Coriolanus?" and Shakspeare replies "By searching histories, in the first place, my Lord, for the germ. The filling up afterwards comes rather from feeling than observation. I turn myself into a Brutus or a Coriolanus for the time and can at least in fancy partake sufficiently of the nobleness of their nature to put proper words in their mouths."

Surely this also must have been penned to open the eyes of the public to the absurdity of the popular conception of the author of the plays as an *un*lettered man who "had small Latin and less Greek"!

The highest scholarship not only in this country and in Germany but throughout the world has been for many years concentrated upon the classical characters portrayed in the plays, and the adverse criticism of former days has given place to a reverential admiration for the marvellous knowledge of antiquity displayed throughout the plays in the presentation of the historical

characters of bygone times; classical authority being found for nearly every word put into their mouths.

What does it matter whether the immortal works were written by Shakspeare (of Stratford) or by a great and learned man who assumed the name Shakespeare to “Shake a lance at Ignorance”? We should not forget that this phrase “Shake a lance at Ignorance” is contemporary, appearing in Ben Jonson’s panegyric in the Shakespeare folio of 1623.

CHAPTER II.

The Shackspere Monument, Bust, and Portrait.

In the year 1909 Mr. George Hookham in the January number of the *National Review* sums up practically all that is really known of the life of William Shakspeare of Stratford as follows: —

'We only know that he was born at Stratford, of illiterate parents — (we do *not* know that he went to school there) — that, when 18-1/2 years old, he married Anne Hathaway (who was eight years his senior, and who bore him a child six months after marriage); that he had in all three children by her (whom with their mother he left, and went to London, having apparently done his best to desert her before marriage); — that in London he became an actor with an interest in a theatre, and was reputed to be the writer of plays; — that he purchased property in Stratford, to which town he returned; — engaged in purchases and sales and law-suits (of no biographical interest except as indicating his money-making and litigious temperament); helped his father in an application for coat armour (to be obtained by false pretences); promoted the enclosure of common lands at Stratford (after being guaranteed against personal loss); made his will — and died at the age of 52, without a book in his possession, and leaving nothing to his wife but his second best bed, and this by an afterthought. No record of friendship with anyone more cultured than his fellow actors.

No letter, — only two contemporary reports of his conversation, one with regard to the commons enclosure as above, and the other in circumstances not to be recited unnecessarily.

In a word we know his parentage, birth, marriage, fatherhood, occupation, his wealth and his chief ambition, his will and his death, and absolutely nothing else; his death being received with unbroken and ominous silence by the literary world, not even Ben Jonson who seven years later glorified the plays *in excelsis*, expending so much as a quatrain on his memory.'

To this statement by Mr. George Hookham I would add that we know W. Shakspeare was christened 26th April 1564, that his Will which commences "In the name of god Amen! I Willim Shackspeare, of Stratford upon Avon, in the countie of warr gent in perfect health and memorie, god be praysed," was dated 25th (January altered to) March 1616, and it was proved 22nd June 1616, Shakspeare having died 23rd April 1616, four weeks after the date of the Will.

We also know that a monument was erected to him in Stratford Church. And because L. Digges, in his lines in the Shakespeare folio of 1623 says "When Time dissolves thy Stratford Moniment,"[1] it is supposed that the monument must have been put up before 1623. But we should remember that as Mrs. Stopes (who is by no means a Baconian) pointed out in the *Monthly Review* of April 1904, the original monument was not like the present monument which shews a man with a pen in his hand; but was the very different monument which will be found depicted in Sir William Dugdale's "Antiquities of Warwickshire," published in 1656. The bust taken from this is shewn on Plate 5, Page 14, and the whole monument on Plate 3, Page 8.

The figure bears no resemblance to the usually accepted likeness of Shakspeare. It hugs a sack of wool, or a pocket of hops to its belly and does not hold a pen in its hand.

In Plate 6, Page 15, is shewn the bust from the monument as it exists at the present time, with the great pen in the right hand and a sheet of paper under the left hand. The whole monument is shewn on Plate 4, Page 9.

The face seems copied from the mask of the so-called portrait in the 1623 folio, which is shewn in Plate 8.

It is desirable to look at that picture very carefully, because every student ought to know that the portrait in the title-page of the first folio edition of the plays published in 1623, which was drawn by Martin Droeshout, is cunningly composed of two left arms and a mask. Martin Droeshout, its designer, was, as Mr. Sidney Lee tells us, but 15 years of age when Shakspeare died. He is not likely therefore ever to have seen the actor of Stratford, yet this is the "Authentic," that is the "Authorised" portrait of Shakspeare, although there *is* no question — there *can be* no possible question — that in fact it is a cunningly drawn cryptographic picture, shewing two left arms and a mask.

The back of the left arm which does duty for the right arm is shewn in
Plate 10, Page 26.

Every tailor will admit that this is not and cannot be the front of the right arm, but is, without possibility of doubt, the back of the left arm.

Plate 11 shews the front of the left arm, and you at once perceive that you are no longer looking at the back of the coat but at the front of the coat.

Head, from the [so-called]
Portrait, by Droeshout, in the 1623 Folio]

Now in Plate 12, Page 32, you see the mask, especially note that the ear is a mask ear and stands out curiously; note also how distinct the line shewing the edge of the mask appears. Perhaps the reader will perceive this more clearly if he turns the page upside down.

Plate 13, Page 33, depicts a real face, that of Sir Nicholas Bacon, eldest son of the Lord Keeper, from a contemporary portrait by Zucchero, lately in the Duke of Fife's Collection. This shews by contrast the difference between the portrait of a living man, and the drawing of a lifeless mask with the double line from ear

to chin. Again examine Plates 8, Pages 20, 21, the complete portrait in the folio. The reader having seen the separate portions, will, I trust, be able now to perceive that this portrait is correctly characterised as cunningly composed of two left arms and a mask.

While examining this portrait, the reader should study the lines that describe it in the Shakespeare folio of 1623, a facsimile of which is here inserted.

To the Reader.

This Figure, that thou here seest put,
It was for gentle Shakespeare cut;
Wherein the Grauer had a strife
with Nature, to out-doo the life:
O, could he but haue drawne his wit
As well in brasse, as he hath hit
His face; the Print would then surpasse
All, that was euer writ in brasse.
But, since he cannot, Reader, looke
Not on his Picture, but his Booke.

B.I.

Plate IX.

VERSES ASCRIBED TO BEN JONSON, FROM THE 1623 FOLIO EDITION OF SHAKESPEARE'S WORKS.

B.I. call the ridiculous dummy a "portrait" but describes it as the "Figure put for" (that is "instead of") and as "the Print," and as "his Picture"; he likewise most clearly tells us to "looke not on his (ridiculous) Picture, but (only) his Booke." It seems, therefore, evident that he knew the secret of Bacon's authorship and intended to inform those capable of understanding that the graver had done out the life when he writes, "Out-doo the life." In the New English Dictionary, edited by Sir J.A.H. Murray, there are upwards of six hundred words

beginning with “Out,” and every one of them, with scarcely a single exception, requires, in order to be fully understood, to be read reversed. Out-law does not mean outside of the law, but lawed out by a legal process. “Out-doo” was used only in the sense of “do out”; thus, in the “Cursor Mundi,” written centuries before the days of Elizabeth, we read that Adam was out done [of Paradise]; and in Drayton’s “Barons’ Wars,” published in 1603, we find in Book V. s. li.

“That he his foe not able to withstand,
Was ta’en in battle and his eyes out-done.”

The graver has indeed done out the life so cleverly that for hundreds of years learned pedants and others have thought that the figure represented a real man, and altogether failed to perceive that it was a mere stuffed dummy clothed in an impossible coat, cunningly composed of the front of the left arm buttoned on to the back of the same left arm, as to form a double left armed apology for a man. Moreover, this dummy is surmounted by a hideous staring mask, furnished with an imaginary ear, utterly unlike anything human, because, instead of being hollowed in, it is rounded out something like the rounded outside of a shoe-horn, in order to form a cup which would cover and conceal any real ear that might be behind it.

Perhaps the reader will more fully understand the full meaning of B.I.’s lines if I paraphrase them as follows: —

To the Reader.

The dummy that thou seest set here,
Was put instead of Shake-a-speare;
Wherein the Graver had a strife
To extinguish all of Nature’s life;
O, could he but have drawn his mind
As well as he’s concealed behind
His face; the Print would then surpasse

All, that was ever writ in brasse.
But since he cannot, do not looke
On his mas'd Picture, but his Booke.

Do out appears in the name of the little instrument something like a pair of snuffer which was formerly used to extinguish the candles and called a "Doute." Therefore I have correctly substituted "extinguished" for "out-doo." At the beginning I have substituted "dummy" for "figure" because we are told that the figure is "put for" (that is, put instead of) Shakespeare. In modern English we frequently describe a chairman who is a mere dummy as a figurehead. Then "wit" in these lines means absolutely the same as "mind," which I have used in its place because I think it refers to the fact that upon the miniature of Bacon in his 18th year, which was painted by Hilliard in 1578, we read:— "Si tabula daretur digna animum mallem." This line is believed to have been written at the time by the artist, and was translated in "Spedding":— "If one could but paint his mind."

In March, 1911, the *Tailor and Cutter* newspaper stated that the Figure, put for Shakepeare in the 1623 folio, was undoubtedly clothed in an impossible coat, composed of the back and the front of the same left arm. And in the following April the *Gentleman's Tailor Magazine*, under the heading of a "Problem for the Trade," shews the two halves of the coat as printed on page 28a, and says: "It is passing strange that something like three centuries should have been allowed to elapse before the tailors' handiwork should have been appealed to in this particular manner."

"The special point is that in what is known as the authentic portrait of William Shakespeare, which appears in the celebrated first folio edition, published in 1623, a remarkable sartorial puzzle is apparent."

"The tunic, coat, or whatever the garment may have been called at the time, is so strangely illustrated that the right-hand side of the forepart is obviously the left-hand side of the backpart; and so gives a harlequin appearance to the figure,

which it is not unnatural to assume was intentional, and done with express object and purpose."

"Anyhow, it is pretty safe to say that if a Referendum of the trade was taken on the question whether the two illustrations shown above represent the foreparts of the same garments, the polling would give an unanimous vote in the negative."

"It is outside the province of a trade journal to dogmatise on such a subject; but when such a glaring incongruity as these illustrations show is brought into court, it is only natural that the tailor should have something to say; or, at any rate, to think about."

This one simple fact which can neither be disputed nor explained away, viz., that the "Figure" put upon the title-page of the First Folio of the Plays in 1623 to represent Shakespeare, is a doubly left-armed and stuffed dummy, surmounted by a ridiculous putty-faced mask, disposes once and for all of any idea that the mighty Plays were written by the illiterate clown of Stratford-upon-Avon.

"He hath *hit* his face"

It is thought that *hit* means *hid* as in Chaucer's Squiere's Tale, line 512 *etc.*

"Right as a serpent *hit* him under floures
Til he may seen his tyme for to byte"

If indeed "hit" be intended to be read as "hid" then these ten lines are no longer the cryptic puzzle which they have hitherto been considered to be, but in conjunction with the portrait, they clearly reveal the true facts, that the real author is writing left-handedly, that means secretly, in shadow, with his face hidden behind a mask or pseudonym.

We should also notice "out-doo" is spelled with a hyphen. In the language of to-day and still more in that of the time of Shakespeare all, or nearly all, words beginning with *out* may be read reversed, out-bar is bar out, out-bud is bud out, out-crop is crop out, out-fit is fit out, and so on through the alphabet.

If therefore we may read "out-doo the life" as "doo out the life" meaning "shut out the real face of the living man" we perceive that here also we are told

“that the real face is hidden.”

The description, with the head line “To the Reader” and the signature “B.I.,” forms twelve lines, the words of which can be turned into numerous significant anagrams, etc., to which, however, no allusion is made in the present work. But our readers will find that if all the letters are counted (the two v.v.’s in line nine being counted as four letters) they will amount to the number 287. In subsequent chapters a good deal is said about this number, but here we only desire to say that we are “informed” that the “Great Author” intended to reveal himself 287 years after 1623, the date when the First Folio was published, that is in the present year, 1910, when very numerous tongues will be loosened.

Examine once more the original Stratford Bust, Plate 5, Page 14, and the present Stratford Bust, Plate 6, Page 15, *with the large pen in the right hand*.

If the Stratford actor were indeed the author of the plays it was most appropriate that he should have a pen in his hand. But in the original monument as shewn in Plate 3, Page 8, the figure hugs a sack of wool or a pocket of hops or may be a cushion. For about 120 years, this continued to be the Stratford effigy and shewed nothing that could in any way connect the man portrayed, with literary work. I believe that this was not accidental. I think that everybody in Stratford must have known that William “Sha*c*kspeare” could not write so much as his own name, for I assert that we possess nothing which can by any reasonable possibility be deemed to be his signature.

CHAPTER III.

The so-called “Signatures.”

In Plate 14, Page 36, are shewn the five so-called signatures. These five being the only pieces of writing in the world that can, even by the most ardent Stratfordians, be supposed to have been written by Shakspeare’s pen; let us consider them carefully. The Will commences “In the name of God Amen I Willum Shackspeare.” It is written upon three sheets of paper and each sheet bears a supposed signature. The Will is dated in Latin “Vicesimo quinto die [Januarij] Mtij Anno Regni Dni nri Jacobi, nunc R Anglie, &c. decimo quarto & Scotie xlix° annoq Dni 1616”, or shortly in English 25th March 1616.

Shakspeare died 23rd April 1616 just four weeks after publishing his will.

I say after “PUBLISHING his Will” advisedly, for such is the attestation, viz., “Witnes to the publyshing hereof,”

“Fra: Collyns
Julius Shawe
John Robinson
Hamnet Sadler
Robert Whattcott”

Nothing is said about the witnessing of the signing hereof. The Will might therefore have been, and I myself am perfectly certain that it was, marked with the name of William Shakspeare by the Solicitor, Fra (ncis) Collyns, who wrote the body of the Will.

He also wrote the names of the other witnesses, which are all in the same handwriting as the Will; shewing that Shakspeare’s witnesses were also unable to write their names.

This fact, that Shakspeare's name is written by the solicitor, is conclusively proved by the recent article of Magdalene Thumm-Kintzel in the Leipzig magazine, *Der Menschenkenner*, which was published in January 1909.

In this publication, photo reproductions of certain letters in the body of the Will, and in the so-called Shakspeare signatures are placed side by side, and the evidence is irresistible that they are written by the same hand. Moreover when we remember that the Will commences "I Willim Sha*c*kspeare" with a "c" between the "a" and "k," the idea that Shakspeare himself wrote his own Will cannot be deemed worthy of serious consideration. The whole Will is in fact in the handwriting of Francis Collyns, the Warwick solicitor, who added the attestation clause.

I myself was sure that the solicitor had added the so-called signatures, when, many years ago, I examined under the strongest magnifying glasses the Will at Somerset House.

Look first at the upper writings and never again call them "signatures." The top one is on the first page of the Will, the second on the second page, the third on the last page of the Will.

The original of the top one has been very much damaged but the "W" remains quite clear. Look first only at the "W's". If the writings were signatures what could induce a man when signing his last Will to make each "W" as different from the others as possible, and why is the second Christian name written Willm?

Compare also the second and third "Shakspeare" and note that every letter is formed in a different manner. Compare the two "S's", next compare the two "h's", the "h" of the second begins at the bottom, the "h" of the third begins at the top, the same applies to the next letter the "a", so also with respect to the "k's "; how widely different these are.

Plate 14 shews at the bottom two other names also. These are taken, the one on the left from a deed of purchase of a dwelling house in Blackfriars dated March 10th 1612-13 (now in the City Library of the Corporation of London); the

other on the right is from a mortgage of the same property executed on the following day, viz: March 11th 1612-13, which is now in the British Museum.

Neither of these documents states that it was "signed" but only says that it was "sealed," and it was at that date in no way necessary that any signatures should be written over the seals, but the clerks might and evidently did, place upon these deeds an abbreviated name of William Shakspeare over the seal on each document. In the case of the other two parties to the documents, the signatures are most beautifully written and are almost absolutely identical in the two deeds.

Look at these two supposititious signatures. To myself it is difficult to imagine that anyone with eyes to see could suppose them to be signatures by the same hand.

Note on the so-called "Signatures."

When part of the purchase money is what is commonly called "left on mortgage," the mortgage deed is always dated one day *after*, but is always signed one moment *before*, the purchase deed, because the owner will not part with his property before he receives his security.

The Shakespeare purchase deed and the mortgage deed were therefore both signed at the same time, in the same place, with the same pen, and the same ink.

This is evidently true with respect to the signatures of Wm. Johnson and Jno. Jackson, the other parries to both of the deeds.

But as I wrote to the City authorities and the British Museum authorities, it would be impossible to discover a scoundrel who would venture to perjure himself and falsely swear that it was even remotely possible that the two supposed signature of Wm. Shakespeare could have been written at the same time, in the same place, with the same pen, and the same ink, by the *same hand*.

They are widely different, one having been written by the law clerk of the seller, the other by the law clerk of the purchaser.

According to the law of England, anyone may (by request) attach any person's name to any document, and if that person touch it, any third person may

witness it as a signature.

Some years ago by the courtesy of the Corporation of London, the Librarian and the Chairman of the Library Committee carried the Purchase Deed to the British Museum to place it side by side with the Mortgage Deed there.

After they had with myself and the Museum Authorities most carefully examined the two deeds, the Librarian of the City Corporation said to me, there is no reason to suppose that the Corporation deed has upon it the signature of Wm. Shakespeare, and the British Museum Authorities likewise told me that they did not think that the Museum Mortgage Deed had upon it a signature of William Shakespeare.

The more you examine the whole five the more you will be certain, as the writer is, after the most careful study of the Will and of the Deeds, that not one of the five writings is a "signature," or pretends to be a "signature," and that therefore there is a probability, practically amounting to a certainty, that the Stratford Actor could not so much as manage to scrawl his own name.

No! We possess not a scrap of writing, not even an attempt at a signature, [see also Chapter XIV., p. 161] that can be reasonably supposed to be written by the Stratford *gentleman*.

He is styled "gentle Shakespeare": this does not refer to anything relating to his character or to his manners but it means that possessing a coat of arms he was legally entitled to call himself a "gentleman."

Chapter IV.

Contemporary Allusions to Shackspere.

Shakspeare the Actor purchased New Place at Stratford-on-Avon in 1597 for £60 and he became a "gentleman" and an esquire when he secured a grant of arms in 1599.

How did the stage “honour” the player who had bought a coat of arms and was able to call himself a “gentleman”?

Three contemporary plays give us scenes illustrating the incident:

1st. Ben Jonson’s “Every man out of his humour” which was acted in 1599 the very year of Shakspeare’s grant of arms.

2nd. Shakespeare’s “As you like it” which was entered at Stationers’ Hall in 1600, although no copy is known to exist before the folio of 1623.

3rd. “The Return from Parnassus” which was acted at St. John’s College, Cambridge in 1601, though not printed till 1606.

In addition to these three plays, there is a fourth evidence of the way in which the Clown who had purchased a coat of arms was regarded, in a pamphlet or tract of which only one copy is known to exist. This tract which can be seen in the Rylands Library, Manchester, used to be in Lord Spencer’s library at Althorp, and is reprinted by Halliwell-Phillipps in “Outlines of the Life of Shakespeare,” 1889, Vol. I, pages 325-6.

To commence with Ben Jonson’s “Every man out of his humour.” The clown who had purchased a coat of arms is said to be the brother of Sordido (a miser), and is described as an “essential” clown (that is an uneducated rustic), and is styled Sogliardo which is the Italian for the filthiest possible name.

The other two characters in the scene (act iii. sc. I) are Puntarvolo who, as his crest is a *Boar*, must be intended to represent Bacon;[2] and Carlo Buffone who is a buffoon or jester.

Enter Sogliardo (the filth), who is evidently the Stratford Clown, who has just purchased a coat of arms: —

Actus Tertius, Scena Prima,
Sogliardo, Punt., Carlo.

Sog. Nay I will haue him, I am resolute for that, by this Parchment Gentlemen, I haue ben so toil'd among the Harrots [meaning *Heralds*] yonder, you will not beleeue, they doe speake i' the straungest language, and giue a man the hardest termes for his money, that euer you knew.

Car. But ha' you armes? ha' your armes?

Sog. Yfaith, I thanke God I can write myselfe Gentleman now, here's my Pattent, it cost me thirtie pound by this breath.

Punt. A very faire Coat, well charg'd and full of Armorie.

Sog. Nay, it has, as much varietie of colours in it, as you haue seene a Coat haue, how like you the Crest, Sir?

Punt. I vnderstand it not well, what is't?

Sog. Marry Sir, it is your Bore without a head Rampant.

Punt. A Bore without a head, that's very rare.

Car. I, [Aye] and Rampant too: troth I commend
the Herald's wit, he has deciphered him well:
A Swine without a head, without braine, wit,
anything indeed, Ramping to Gentilitie. You
can blazon the rest signior? can you not?

. . . . . .

. . . . . .

Punt. Let the word be, *Not without mustard*, your
Crest is very rare sir.

Shakspeare's "word" that is his "motto" was — non sanz droict — not without right — and I desire the reader also especially to remember Sogliardo's words "Yfaith I thanke God" a phrase which though it appears in the quartos is changed in the 1616 Ben Jonson folio into "I thank *them*" which has no meaning.

Next we turn to Shakespeare's "As you like it." This play though entered at Stationers' Hall in 1600 and probably played quite as early is not known in print

till it appeared in the folio of 1623. The portion to which I wish to refer is the commencement of Actus Quintus, Scena Prima.

Act 5, Scene i. Enter Clowne and Awdrie.

Clow. We shall finde a time *Awdrie*, patience gentle
Awdrie.

Awd. Faith the priest was good enough, for all the
olde gentlemans saying.

Clow. A most wicked Sir *Oliver, Awdrie*, a most vile *Mar-text.* But *Awdrie*, there is a youth heere in the forrest layes claime to you.

Awd. I, I know who 'tis: he hath no interest in mee in the world: here comes the man you meane.

(Enter William)

Clo. It is meat and drinke to me to see a clowne, by my troth, we that haue good wits, haue much to answer for: we shall be flouting: we cannot hold.

Will. Good eu'n *Audrey.*

Awd. God ye good eu'n *William*.

Will. And good eu'n to you sir.

Clo. Good eu'n gentle friend. Couer thy head, couer thy head: Nay prethee bee couer'd. How olde are you Friend?

Will. Fiue and twentie Sir.

Clo. A ripe age: Is thy name *William*?

Will. *William*, Sir.

Clo. A faire name. Was't borne i' the Forrest heere?

Will. I [Aye] Sir, I thanke God.

Clo. Thanke God: A good answer: Art rich?

Will. 'Faith Sir, so, so.

Clo. So, so, is good, very good, very excellent good: and yet it is not, it is but so, so: Art thou wise?

Will. I [Aye] sir, I haue a prettie wit.

Clo. Why, thou saist well. I do now remember a saying: The Foole doth thinke he is wise, but the wise man knowes himselfe to be a Foole…. You do loue this maid?

Will. I do Sir.

Clo. Giue me your hand: art thou Learned?

Will. No Sir.

Clo. Then learne this of me, To haue is to haue. For it is a figure in Rhetoricke, that drink being powr'd out of a cup into a glasse, by filling the one, doth empty the other. For all your Writers do consent, that *ipse* is hee: now you are not *ipse*, for I am he.

Will. Which he Sir?

Clo. He Sir, that must marrie this woman.

Firstly I want to call your attention to Touchstone the courtier who is playing clown and who we are told "uses his folly like a stalking horse and under the presentation of that he shoots his wit." Notice that Touchstone refuses to be married to Awdrey (who probably represents the plays of Shakespeare) by a-Mar-text, and she declares that the Clown William "has no interest in mee in the world." William — shall we say Shakspeare of Stratford? — enters and is greeted as "gentle" (*i. e*. he is possessed of a coat of arms). He says "Thank God" he was born in the forest here (Ardennes, very near in sound to Arden). "Thank God" is repeated by Touchstone and as it is the same phrase that is used by Sogliardo in Ben Jonson's play I expect that it was an ejaculation very characteristic of the real man of Stratford and I am confirmed in this belief because in the folio edition of Ben Jonson's plays the phrase is changed to "I thank *them*" which has no meaning.

The clown of Ardennes is rich but only rich for a clown (Shakspeare of Stratford was not really rich, New Place cost only £60).

Asked if he is wise, he says “aye,” that is “yes,” and adds that he has “a pretty wit,” a phrase we must remember that is constantly used in reference to the Stratford actor. Touchstone mocks him with a paraphrase of the well-known maxim “If you are wise you are a Foole if you be a Foole you are wise” which is to be found in Bacon’s “Advancement of Learning” Antitheta xxxi. Then he asks him “*Art thou learned*” and William replies “*No sir*.” This means, *unquestionably*, as every lawyer must know, that William replies that he cannot *read* one line of print. I feel sure the man called Shackspeare of Stratford was an uneducated rustic, never able to read a single line of print, and that this is the reason why no books were found in his house, this is the reason why his solicitor, Thomas Greene, lived with him in his house at New Place (Halliwell-Phillipps: Outlines, 1889, Vol. i, p. 226); — a well-known fact that very much puzzles those who do not realize the depth of Shakspeare’s illiteracy.

Chapter V.

“The Return from Parnassus” and “Ratsei’s Ghost.”

The next play to which attention must be called is “The Return from Parnassus” which was produced at Cambridge in 1601 and was printed in 1606 with the following title page: —

The Returne from Parnassus
or
The Scourge of Simony.
Publiquely acted by the Students
in Saint Johns Colledge in
Cambridge.

At London
Printed by G. Eld for John Wright, and
are to bee sold at his shop at

Christchurch Gate.
1606.

The portion to which I wish to direct attention is: —
Actus 5, Scena i.

Studioso. Fayre fell good *Orpheus*, that would rather be
King of a mole hill, then a Keysars slaue:
Better it is mongst fidlers to be chiefe,
Then at plaiers trencher beg reliefe.
But ist not strange this mimick apes should prize
Vnhappy Schollers at a hireling rate.
Vile world, that lifts them vp to hye degree,
And treades vs downe in groueling misery.
England affordes those glorious vagabonds,
That carried earst their fardels on their backes,
Coursers to ride on through the gazing streetes
Sooping it in their glaring Satten sutes,
And Pages to attend their maisterships:
With mouthing words that better wits haue framed,
They purchase lands, and now Esquiers are made.

Philomusus. What ere they seeme being euen at the best
They are but sporting fortunes *scornfull* iests.

Can these last two lines refer to Shakspeare the actor seeming to be the poet? Note that they are spoken by Philomusus that is friend of the poetic muse. Mark also the words "this mimick apes." Notice especially "with mouthing words that *better* wits haue framed, they purchase lands and now Esquiers are made" *i.e.* get grants of arms. Who at this period among mimics excepting W. Shakspeare of Stratford purchased lands and obtained also a grant of arms?

That this sneer "mouthing words that better wits have framed" must have been aimed at Shakspeare is strongly confirmed by the tract (reprinted by Halliwell-Phillipps in his "Outlines of Shakespeare," 1889, Vol. I, p. 325) which is called "Ratsei's Ghost or the second part of his mad prankes and Robberies."

This pamphlet bears no date, but was entered at Stationers' Hall May 31st 1605. There is only a single copy in existence, which used to be in Earl Spencer's library at Althorp but is now in the Rylands; Library at Manchester. As I said, it is reprinted by Halliwell-Phillipps, and Stratfordians are obliged to agree with him that the reference is unquestionably to "Wm Shakespeare of Stratford." The most important part which is spoken by Ratsei the robber to a country player is as follows: —

Ratsei. And for you sirra, saies hee to the chiefest of them, thou hast a good presence upon a stage; methinks thou darkenst thy merite by playing in the country. Get thee to London, for if one man were dead, they will have much neede of such a one as thou art. There would be none in my opinion fitter then thyselfe to play his parts. My conceipt is such of thee, that I durst venture all the mony in my purse on thy head to play Hamlet with him for a wager. There thou shalt learn to be frugall, — for players were never so thriftie as they are now about London — and to feed upon all men, to let none feede upon thee; to make thy hand a stranger to thy pocket, thy hart slow to performe thy tongues promise, and when thou feelest thy purse well lined, buy thee some place of lordship in the country, that, growing weary of playing, thy mony may there bring thee to dignitie and reputation; then thou needest care for no man, nor not for them that before made thee prowd with speaking their words upon the stage.

The whole account of buying a place in the country, of feeding upon all men (that is lending money upon usury) of never keeping promises, of never giving anything in charity, agrees but too well with the few records we possess of the man of Stratford. And therefore Stratfordians are obliged to accept Halliwell-Phillipps' dictum that this tract called Ratsei's Ghost refers to the actor of Stratford and that "*he* needed not to care for them that before made *him* proud with speaking *their* words upon the stage." How is it possible that Stratfordians

can continue to refuse to admit that the statement in the “Return from Pernassus” “with mouthing words that better wits haue framed they purchase lands and now Esquiers are made” must also refer to the Stratford Actor?

CHAPTER VI.

Shackspere's Correspondence!

There is only a single letter extant addressed to Shakspeare, and this asks for a loan of £30 It is dated 25th October 1598, and is from Richard Quiney. It reads

"Loveinge Countreyman I am bolde of vow as of a ffrende,
craveinge yowr helpe wth xxxll vppon mr Bushells & my
securytee or mr Myttons wth me. mr Rosswell is nott come
to London as yeate & I have especiall cawse. yow shall
ffrende me muche in helpeinge me out of all the debttes I
owe in London I thancke god & muche quiet my mynde wch
wolde nott be indebeted I am nowe towardes the Cowrte in
hope of answer for the dispatche of my Buysenes. yow shall
nether loase creddytt nor monney by me the Lorde wyllinge
and nowe butt perswade yowr selfe soe as I hope & yow shall
nott need to feare butt wth all hartie thanckefullenes I wyll
holde my tyme & content yowr ffrende & yf we Bargaine
farther yow shalbe the paie mr yowr selfe. my tyme biddes me
hasten to an ende & soe I committ thys [to] yowr care & hope
of yowr helpe. I feare I shall nott be backe thys night ffrom
the Cowrte. haste, the Lorde be wth yow & with us all
amen
ffrom the Bell in Carter Lane the 25 October 1598.
yowrs in all kyndenes
Ryc. Quyney

(*addressed*)

LS To my Loveinge good ffrend
& contreymann mr wm

Shackespere d[e]l[ive]r thees."

This letter is the only letter known to exist which was ever addressed to William Shackspere, the illiterate householder of Stratford, who as has been pointed out in these pages was totally unable to read a line of print, or to write even his own name. There are however in existence three, and three only, contemporary letters referring in any way to him, and these are not about literature with which the Stratford man had nothing whatever to do — but about mean and sordid small business transactions.

One is from Master Abraham Sturley, who writes in 1598 to a friend in London in reference to Shakspeare lending "Some monei on some od yarde land or other att Shottri or neare about us."

Another is dated Nov. 4th 1598, and is from the same Abraham Sturley to Richard Quiney in which we are told that "our countriman Mr Wm Shak would procure us monei wc I will like of."

A third from Adrian Quiney written (about 1598-1599) to his son Rycharde Quiney in which he says "yff yow bargen with Wm Sha or receve money therfor, brynge youre money homme."

There exists no contemporary letter from anyone to anyone, referring to the Stratford actor as being a poet or as being in any way connected with literature. But from the Court Records we learn that;

In 1600 Shakespeare brought action against John Clayton in London for £7 and got judgment in his favour. He also sued Philip Rogers of Stratford for two shillings loaned.

In 1604 he sued Philip Rogers for several bushels of malt sold to him at various times between March 27th and the end of May of that year, amounting in all to the value of £1. 15s. 10d. The poet a dealer in malt?

In 1608 he prosecuted John Addenbroke to recover a debt of £6 and sued his surety Horneby.

Halliwell-Phillipps tells us that "The precepts as appears from memoranda in the originals, were issued by the poet's solicitor Thomas Greene who was then residing under some unknown conditions[3] at New Place."

Referring to these sordid stories, Richard Grant White, that strong believer in the Stratford man, says in his "Life and genius of William Shakespeare," p. 156 "The pursuit of an impoverished man for the sake of imprisoning him and depriving him both of the power of paying his debts and supporting himself and his family, is an incident in Shakespeare's life which it requires the utmost allowance and consideration for the practice of the time and country to enable us to contemplate with equanimity — satisfaction is impossible."

"The biographer of Shakespeare must record these facts because the literary antiquaries have unearthed and brought them forward as new particulars of the life of Shakespeare. We hunger and receive these husks; we open our mouths for food and we break our teeth against these stones."

Yes! The world has broken its teeth too long upon these stones to continue to mistake them for bread. And as the accomplished scholar and poetess the late Miss Anna Swanwick once declared to the writer, she knew nothing of the Bacon and Shakespeare controversy, but Mr. Sidney Lee's "Life of Shakespeare" had convinced her that his man never wrote the plays. And that is just what everybody else is saying at Eton, at Oxford, at Cambridge, in the Navy, in the Army, and pretty generally among unprejudiced people everywhere, who are satisfied, as is Mark Twain, that the most learned of works could not have been written by the most *un*learned of men.

Yes! It does matter that the "Greatest Birth of Time" should no longer be considered to have been the work of the unlettered rustic of Stratford; and the hour has at last come when it should be universally known that this mighty work was written by the man who had taken all knowledge for his province, the man who said "I have, though in a despised weed [that is under a Pseudonym]

procured the good of all men”; the man who left his “name and memory to men’s charitable speeches, and to foreign nations, and the next ages.”

CHAPTER VII.

Bacon acknowledged to be a Poet.

In discussing the question of the Authorship of the plays many people appear to be unaware that Bacon was considered by his contemporaries to be a great poet. It seems therefore advisable to quote a few witnesses who speak of his pre-eminence in poetry.

In 1645 there was published "The Great Assises holden in Parnassus by Apollo and his assessours" a facsimile of the title of which is given on page 57. This work is anonymous but is usually ascribed to George Withers and in it Bacon as Lord Verulan is placed first and designated "Chancellor of Parnassus" that is "Greatest of Poets."

After the title, the book commences with two pages of which facsimiles are given on pages 58, 59.

Apollo appears at the top, next comes Lord Verulan as Chancellor of Parnassus, Sir Philip Sidney and other world renowned names follow and then below the line side by side is a list of the jurors and a list of the malefactors.

A little examination will teach us that the jurors are really the same persons as the malefactors and that we ought to read right across the page as if the dividing line did not exist.

Acting on this principle we perceive that George Wither [Withers] is correctly described as Mercurius Britanicus. Mr. Sidney Lee tells us that Withers regarded "Britain's Remembrancer" 1628 and "Prosopopaeia Britannica" 1648 as his greatest works.

Thomas Cary [Carew] is correctly described as Mercurias Aulicus — Court Messenger. He went to the French Court with Lord Herbert and was made Gentleman of the Privy Chamber by Charles I who presented him with an

estate at Sunninghill.

Thomas May is correctly described as Mercurius Civicus. He applied for the post of Chronologer to the City of London and James I wrote to the Lord Mayor (unsuccessfully) in his favour.

Josuah Sylvester is correctly described as The Writer of Diurnals. He translated Du Bartas "Divine Weekes," describing day by day, that is "Diurnally," the creation of the world.

Georges Sandes [Sandys] is The Intelligencer. He travelled all over the world and his book of travels was one of the popular works of the period.

Michael Drayton is The Writer of Occurrences. Besides the "Poly-Olbion," he wrote "England's Heroicall Epistles" and "The Barron's Wars."

Francis Beaumont is The Writer of Passages. This exactly describes him as he is known as writing in conjunction with Fletcher. "Beamount and Fletcher make one poet, they single dare not adventure on a play."

William Shakespeere is "The writer of weekely accounts." This exactly describes him, for the only literature for which he was responsible was the accounts sent out by his clerk or attorney.

Turning over the pages of the little book on page 9 the cryer calls out "Then Sylvester, Sands, Drayton, Beaumont, Fletcher, Massinger, Shakespeare (sic) and Heywood, Poets good and true." This statement seems to be contradicted so far as Shakespeare is concerned by the defendant who says on page 31 "Shakespear's (sic) a mimicke" (that is a mere actor not a poet).

"Beamount and Fletcher make one poet, they
Single, dare not adventure on a play."

Each of these statements seems to be true. And on Page 33
Apollo[4] says

"We should to thy exception give consent
But since we are assur'd, 'tis thy intent,

By this refusall, onely to deferre
That censure, which our justice must conferre
Upon thy merits; we must needs decline
From approbation of these pleas of thine."

That is, Apollo *admits* that Shakespeare is not a poet but a "mimic," the word to which I called your attention in the "Return from Parnassus" in relation to "this mimick apes." In this little book Shakespeare's name occurs three times, and on each occasion is spelled differently.

This clear statement that the actor Shakespeare was not a poet but only a tradesman who sent out his "weekly accounts" is, I think, here for the first time pointed out. It seems very difficult to conceive of a much higher testimony to Bacon's pre-eminence in poetry than the fact that he is placed as "Chancellor of Parnassus" under Apollo. But a still higher position is accorded to him when it is suggested that Apollo feared that he himself should lose his crown which would be placed on Bacon's head.

Walter Begbie in "Is it Shakespeare?" 1903, p. 274, tells us: — That Thomas Randolf, in Latin verses published in 1640 but probably written some 14 years earlier says that Phoebus was accessory to Bacon's death because he was afraid lest Bacon should some day come to be crowned King of poetry or the Muses. Farther on the same writer declares that as Bacon "was himself a singer" he did not need to be celebrated in song by others, and that George Herbert calls Bacon the colleague of Sol [Phoebus Apollo].

George Herbert was himself a dramatic poet and Bacon dedicated his "Translation of the Psalms" to him "who has overlooked so many of my works."

Mr. Begbie also tells us that Thomas Campion addresses Bacon thus "Whether the thorny volume of the Law or the Schools or the *Sweet Muse* allure thee."

It may be worth while here to quote the similar testimony which is borne by John Davies of Hereford who in his "Scourge of Folly" published about 1610, writes

"To the royall, ingenious, and all-learned
Knight, —

Sr Francis Bacon.
Thy *bounty* and the *Beauty* of thy Witt
Comprisd in Lists of *Law* and learned *Arts*,
Each making thee for great *Imployment* fitt
Which now thou hast, (though short of thy
deserts)
Compells my pen to let fall shining *Inke*
And to bedew the *Baies* that *deck* thy *Front*; —
And to thy health in *Helicon* to drinke
As to her *Bellamour* the *Muse* is wont:
For thou dost her embozom; and dost vse
Her company for sport twixt grave affaires;
So vtterst Law the liuelyer through thy *Muse*.
And for that all thy *Notes* are sweetest *Aires*;
My Muse thus notes thy worth in eu'ry Line,
With yncke which thus she sugers; so, to shine."

But nothing can much exceed in value the testimony of Ben Jonson who in his "Discoveries," 1641, says "But his learned, and able (though unfortunate) *Successor* [Bacon in margin] is he, who hath fill'd up all numbers, and perform'd that in our tongue, which may be compar'd or preferr'd either to insolent *Greece*, or haughty *Rome*."

"He who hath filled up all numbers" means unquestionably "He that hath written every kind of poetry."[5]

Alexander Pope the poet declares that he himself "lisped in numbers for the numbers came." Ben Jonson therefore bears testimony to the fact that Bacon was so great a poet that he had in poetry written that "which may be compar'd or preferr'd either to insolent *Greece* or haughty *Rome*."

But in 1623 Ben Jonson had said of the AUTHOR of the plays

"Or when thy sockes were on Leaue thee alone, for the comparison Of all, that insolent Greece *or haughtie* Rome *Sent forth, or since did from their ashes come."*

Surely the statements in the "Discoveries" were intended to tell us who was the AUTHOR of the plays.

After perusing these contemporary evidences, and they might be multiplied, it is difficult to understand how anyone can venture to dispute Bacon's position as pre-eminent in poetry. But it may be of interest to those who doubt whether Bacon (irrespective of any claim to the authorship of the plays) could be deemed to be a great poet, to quote here the words of Percy Bysshe Shelley, who in his "Defence of Poetry" says

"Bacon was a poet. His language has a sweet and majestic rhythm, which satisfies the sense, no less than the almost superhuman wisdom of his philosophy satisfies the intellect. It is a strain which distends and then bursts the circumference of the reader's mind, and pours itself forth together with it into the universal element with which it has perpetual sympathy."

The immortal plays are the "Greatest Birth of Time," and contain a short summary of the wisdom of the world from ancient times, and they exhibit an extent and depth of knowledge in every branch which has never been equalled at any period of the world's history. In classic lore, as the late Mr. Churton Collins recently pointed out, they evince the ripest scholarship. And this is confirmed by classical scholars all the world over.

None but the profoundest lawyers can realise the extent of the knowledge not only of the theory but of the practice of Law which is displayed. Lord Campbell says that Lord Eldon [supposed to have been the most learned of judges] need not have been ashamed of the law of Shakespeare. And as an instance of the way in which the members of the legal profession look up to the mighty author I may mention that some years ago, at a banquet of a Shakespeare Society at which Mr. Sidney Lee and the writer were present, the late Mr. Crump, Q.C., editor of the *Law Times*, who probably possessed as much knowledge of law as any man in

this country, declared that to tell him that the plays were not written by the greatest lawyer the world has ever seen, or ever would see, was to tell him what he had sufficient knowledge of law to know to be nonsense. He said also that he was not ashamed to confess that he himself, though he had some reputation for knowledge of law, did not possess sufficient legal knowledge to realise one quarter of the law that was contained in the Shakespeare plays.

It requires a philologist to fully appreciate what the enormous vocabulary employed in the plays implies.

Max Muller in his "Science of Language," Vol. I, 1899, p. 379, says

"A well-educated person in England, who has been at a public school and at the University … seldom uses more than about 3,000 or 4,000 words. … The Hebrew Testament says all that it has to say with 5,642 words, Milton's poetry is built up with 8,000; and Shakespeare, who probably displayed a greater variety of expression than any writer in any language … produced all his plays with about 15,000 words."

Shakspeare the householder of Stratford could not have known so many as one thousand words.

But Bacon declared that we must make our English language capable of conveying the highest thoughts, and by the plays he has very largely created what we now call the English language. The plays and the sonnets also reveal their author's life.

In the play of "Hamlet" especially, Bacon seems to tell us a good deal concerning himself, for the auto-biographical character of that play is clearly apparent to those who have eyes to see. I will, however, refer only to a single instance in that play. In the Quarto of 1603, which is the first known edition of the play of "Hamlet," we are told, in the scene at the grave, that Yorick has been dead a dozen years; but in the 1604 Quarto, which was printed in the following year, Yorick is stated to have been dead twenty-three years. This corrected number, twenty-three, looks therefore like a real date of the death of a real person. The words in the Quarto of 1604 are as follows: —

Hamlet, Act v, Scene i.

"[Grave digger called.] Clow[n] … heer's a scull now hath lyen you i' th' earth 23 yeeres … this same scull, sir, was, sir, Yorick's skull, the Kings jester …

Ham[*let*]. Alas poore *Yoricke*, I knew him *Horatio*, a fellow of infinite iest, of most excellent fancie, hee hath bore me on his backe a thousand times … Heere hung those lyppes that I haue kist, I know not howe oft, where be your gibes now? your gamboles, your songs, your flashes of merriment, that were wont to set the table on a roare, not one now to mocke your owne grinning…."

The King's Jester who died about 1580-1, just twenty-three years before 1604 (as stated in the play), was John Heywood, the last of the King's Jesters. The words spoken by Hamlet exactly describe John Heywood, who was wont to set the table in a roar with his jibes, his gambols, his songs, and his flashes of merriment. He was a favourite at the English Court during three if not four reigns, and it is recorded that Queen Elizabeth as a Princess rewarded him. It is an absolutely gratuitous assumption that he was obliged permanently to leave England when she became Queen. Indeed it is believed that he was an intimate friend of the Bacon family, and must have carried little Francis Bacon any number of times upon his back, and the little fellow must have kissed him still more oftentimes. The story in the play of "Hamlet" seems, therefore, to fit in exactly with the facts of Bacon's life; but it is not possible that the most fertile imagination of the most confirmed Stratfordian can suppose that the Stratford actor ever saw John Heywood, who died long before Shakspere came to London.

CHAPTER VIII.

The Author revealed in the Sonnets.

Bacon also reveals much of himself in the play "As you like it," which of course means "Wisdom from the mouth of a fool." In that play, besides giving us much valuable information concerning his "mask" William Shakespeare, he also tells us why it was necessary for him to write under a pseudonym.

Speaking in the character of Jaques, who is the alter ego of Touchstone, he says,

Act ii, Scene 7.

"O that I were a foole,
I am ambitious for a motley coat.
Duke. Thou shalt haue one.
Jag. It is my onely suite,
Prouided that you weed your better judgements
Of all opinion that growes ranke in them,
That I am wise. I must haue liberty
Wiithall, as large a Charter as the winde,
To blow on whom I please, for so fooles haue:
And they that are most gauled with my folly,
They most must laugh….
Inuest me in my motley: Giue me leaue
To speake my minde, and I will through and through
Cleanse the foule bodie of th' infected world
If they will patiently receiue my medicine."

He also gives us most valuable information in Sonnet 81.

Or I shall liue your Epitaph to make,
Or you suruiue when I in earth am rotten,
From hence your memory death cannot take,
Although in me each part will be forgotten,
Your name from hence immortall life shall haue,
Though I (once gone) to all the world must dye,
The Earth can yeeld me but a common graue,
When you intombed in men's eyes shall lye,
Your monument shall be my gentle verse,
Which eyes not yet created shall ore read,
And toungs to be, your being shall rehearse,
When all the breathers of this world are dead,
You still shall liue (such vertue hath my Pen)
Where breath most breaths euen in the mouths of men.

Stratfordians tell us that the above is written in reference to a poet whom Shakespeare "evidently" regarded as a rival. But it is difficult to imagine how sensible men can satisfy their reason with such an explanation. Is it possible to conceive that a poet should write *against a rival*

"Your name from hence immortall life shall haue
Though I (once gone) to all the world must dye"

or should say *against* a *rival*,

"The Earth can yeeld me but a common graue
While you intombed in men's eyes shall lye."

or should have declared "*against* a *rival*,"
"Your monument shall be my gentle verse"

No! This sonnet is evidently written in reference to the writer's mask or pseudonym which would continue to have immortal life (even though he himself

might be forgotten) as he says

"Although in me each part will be forgotten."

It is sometimes said that Shakespeare (meaning the Stratford actor) did not know the value of his immortal works. Is that true of the writer of this sonnet who says

"my gentle verse
Which eyes not yet created shall ore read"

No! The writer knew his verses were immortal and would immortalize the pseudonym attached to them

"When all the breathers of this world are dead."

Perhaps the reader will better understand Sonnet 81 if I insert the words necessary to fully explain it.

Or shall I [Bacon] live your Epitaph to make,
Or you [Shakespeare] survive when I in Earth am rotten,
From hence your memory death cannot take,
Although in me each part will be forgotten.
Your name [Shakespeare] from hence immortal life shall have,
Though I [Bacon] once gone to all the world must die,
The earth can yield me but a common grave,
When you entombed in men's eyes shall lie,
Your monument shall be my [not your] gentle verse,
Which eyes not yet created shall ore read,
And tongues to be your being [which as an author
was not] shall rehearse,
When all the breathers of this world are dead,
You [Shakespeare] still shall live, such vertue
hath my pen [not your own pen, for you never wrote a line]
Where breathe most breaths even in the mouths of men.

This Sonnet was probably written considerably earlier than 1609, but at that date Bacon's name had not been attached to any work of great literary importance.

After the writer had learned the true meaning of Sonnet 81, his eyes were opened to the inward meaning of other Sonnets, and he perceived that Sonnet No. 76 repeated the same tale.

"Why write I still all one, euer the same,
And keep inuention in a noted weed,
That euery word doth almost sel my name,
Shewing their birth and where they did proceed?"

(Sel may mean spell or tell or possibly betray.)

Especially note that "Invention" is the same word that is used by Bacon in his letter to Sir Tobie Matthew of 1609 (same date as the Sonnets), and also especially remark the phrase "in a noted weed," which means in a "pseudonym," and compare it with the words of Bacon's prayer, "I have (though in a 'despised weed') procured the good of all men." [Resuscitatio, 1671.] Was not the pseudonym of the Actor Shakespeare a very "despised weed" in those days?

Let us look also at Sonnet No. 78.

"So oft have I enuoked thee for my Muse,
And found such faire assistance in my verse,
As every *alien* pen hath got my use,
And under thee their poesy disperse."

Here again we should understand how to read this Sonnet as under: —

"So oft have I enuoked thee [Shakespeare] for my Muse,
And found such faire assistance in my verse,
As every *alien* pen hath got my use,
And under thee [Shakespeare] their poesy disperse."

“Shakespeare” is frequently charged with being careless of his works and indifferent to the piracy of his name; but we see by this Sonnet, No. 78, that the real author was not indifferent to the false use of his pseudonym, though it was, of course, impossible for him to take any effectual action if he desired to preserve his incognito, his mask, his pseudonym.

CHAPTER IX.

Mr. Sidney Lee and the Stratford Bust.

One word to the Stratfordians. The "Shakespeare of Stratford-on-Avon" myth has been shattered and destroyed by the mass of inexactitudes collected in the supposititious "Life of Shakespeare" by Mr. Sidney Lee, who has done his best to pulverise what remained of that myth by recently writing as follows: —

"Most of those who have pressed the question [of Bacon being the real Shakespeare] on my notice, are men of acknowledged intelligence and reputation in their own branch of life, both at home and abroad. I therefore desire as respectfully, but also as emphatically and as publicly, as I can, to put on record the fact, as one admitting to my mind of no rational ground for dispute, that there exists every manner of contemporary evidence to prove that Shakspere, the householder of Stratford-on-Avon, wrote with his own hand, and exclusively by the light of his only genius (merely to paraphrase the contemporary inscription on his tomb in Stratford-on-Avon Church) those dramatic works which form the supreme achievement in English Literature."

As a matter of fact, not a single scrap of evidence, contemporary or otherwise, exists to show that Shakspere, the householder of Stratford-on-Avon, wrote the plays or anything else; indeed, the writer thinks that he has conclusively proved that this child of illiterate parents and father of an illiterate child was himself so illiterate that he was never able to write so much as his own name. But Mr. Sidney Lee seems prepared to accept *anything* as "contemporary evidence," for on pages 276-7 (1898 edition) of his "Life of Shakespeare" he writes

"Before 1623 an elaborate monument, by a London sculptor of Dutch birth, Gerard Johnson, was erected to Shakespeare's memory in the chancel of the parish church. It includes a half-length bust, depicting the dramatist on the point of writing. The fingers of the right hand are disposed as if holding a pen, and under the left hand lies a quarto sheet of paper."

As a matter of fact, the *present* Stratford monument was not put up till about one hundred and twenty years *after* Shakspeare's death. The original monument, see Plate 3 on Page 8, was a very different monument, and the figure, as I have shewn in Plate 5, instead of holding a pen in its hand, rests its two hands on a wool-sack or cushion. Of course, the false bust in the existing monument was substituted for the old bust for the purpose of fraudulently supporting the Stratford myth.

When Mr. Sidney Lee wrote that the present monument was erected before 1623 he did not do this consciously to deceive the public; still, it is difficult to pardon him for this and the other reckless statements with which his book is filled. But what are we to say of his words (respecting the *present* monument) which we read on page 286? "It was first engraved — very imperfectly — in Rowe's edition of 1709." An exact full size photo facsimile reproduction of Rowe's engraving is shown in Plate 19, Page 77.

As a matter of fact, the real Stratford monument of 1623 was first engraved in Dugdale's "Warwickshire" of 1656, where it appears opposite to page 523. We can, however, pardon Mr. Sidney Lee for his ignorance of the existence of that engraving; but how shall we pardon him for citing Rowe as a witness to the early existence of the present bust? To anyone not wilfully blinded by passion and prejudice, Rowe's engraving [see Plate 19, Page 77] clearly shews a figure absolutely different from the Bust in the present monument. Rowe's figure is in the same attitude as the Bust of the original monument engraved by Dugdale, and does not hold a pen in its hand, but its two hands are supported on a wool-sack or cushion, in the same manner as in the Bust from Dugdale which I have shewn in Plate 5, on Page 14.

What are we to say respecting the frontispiece to the 1898 edition of what he is pleased to describe as the "Life of William Shakespeare," which Mr. Sidney

Lee tells us is “from the ‘Droeshout’ painting now in the Shakespeare Memorial Gallery at Stratford-on-Avon”?

As a matter of fact there is no “Droeshout” painting. The picture falsely so called is a manifest forgery and a palpable fraud, for in it all the revealing marks of the engraving by Martin Droeshout which appeared in the 1623 folio are purposely omitted. A full size photo facsimile of Martin Droeshout’s engraving is shewn in Plate 8, pp. 20-21. In the false and fraudulent painting we find no double line to shew the mask, and the coat is really a coat and not a garment cunningly composed of two left arms.

Still it does seem singularly appropriate and peculiarly fitting that Mr. Sidney Lee should have selected as the frontispiece of the romance which he calls the “Life” of Shakespeare, an engraving of the false and fraudulent painting now in the Stratford-on-Avon Gallery for his first edition of 1898; and should also have selected an engraving of the false and fraudulent monument now in Stratford-on-Avon Church as the frontispiece for his first Illustrated Library Edition of 1899.

Mr. Sidney Lee is aware of the fact that Martin Droeshout was only fifteen years old when the Stratford actor died. But it is possible that he may not know that (in addition to the Shakespeare Mask which Droeshout drew for the frontispiece of the 1623 folio edition of the Plays of Shakespeare, in order to reveal, to those who were able to understand, the true facts of the Authorship of those plays), Martin Droeshout also drew frontispieces for other books, which may be similarly correctly characterised as cunningly composed, in order to reveal the true facts of the authorship of such works, unto those who were capable of grasping the hidden meaning of his engravings.

One other point it is worth while referring to. The question is frequently asked, if Bacon wrote under the name of Shakespeare, why so carefully conceal the fact? An answer is readily supplied by a little anecdote related by Ben Jonson, which was printed by the Shakespeare Society in 1842, in their “Notes of Ben Jonson’s conversations with William Drummond of Hawthornden”.

“He [Ben Jonson] was dilated by Sir James Murray to the King, for writting something against the Scots, in a play Eastward Hoe, and voluntarly

imprissonned himself with Chapman and Marston who had written it amongst them. The report was that they should then [have] had their ears cut and noses. After their delivery, he banqueted all his friends; there was Camden, Selden, and others; at the midst of the feast his old Mother dranke to him, and shew him a paper which she had (if the sentence had taken execution) to have mixed in the prisson among his drinke, which was full of lustie strong poison, and that she was no churle, she told, she was minded first to have drunk of it herself."

This was in 1605, and it is a strange and grim illustration of the dangers that beset men in the Highway of Letters.

It was necessary for Bacon to write under pseudonyms to conceal his identity, but he intended that at some time posterity should do him justice and it was for this purpose that, among the numerous clues he supplied to reveal himself he wrote "The Tempest" in its present form, which Emile Montegut writing in the *Revue des Deux Mondes* in 1865 declared to be the author's literary Testament.

The Island is the Stage. Prospero the prime Duke, the great Magician, represents the Mighty Author who says "my brother … called Anthonio who next thyself of all the world I lov'd" … "graves at my command have wak'd their sleepers op'd and let them forth by my so potent Art" …

"and deeper than ever plummet sound
He drown my booke."

Yet he does not forget finally to add "I do … require my Dukedome of thee, which perforce I know thou must restore."

The falsely crowned and gilded king of the Island who had stolen the wine (the poetry) "where should they find this grand liquor that hath gilded them" and whose name is Stephanos (Greek for crown) throws off at the close of the play, his false crown while Caliban says "What a thrice double asse was I to take this drunkard for a God."

The mighty Magician Prospero says "knowing I lov'd my bookes, he furnished me from mine own Library, with volumes, that I prize above my

Dukedome." Bacon when he was dismissed from his high offices, devoted himself to his books. Not a book of any kind was found at New Place, Stratford. Bacon's brother "whom next himself he loved" was called Anthony. "Gentle" Shakespeare of Stratford died from the effects of a "Drunken" bout!

It does matter whether it is thought that the Immortal works were written by the sordid money-lender of Stratford, the "Swine without a head, without braine, wit, anything indeed, Ramping to Gentilitie"; or were written by him who was himself the "Greatest Birth of Time"; the man pre-eminently distinguished amongst the sons of earth; the man who in order to "do good to all mankind," disguised his personality "in a despised weed," and wrote under the name of William Shakespeare.

It does matter, and England is now declining any longer to *dishonour* and *defame* the greatest Genius of all time by continuing to identify him with the mean, drunken, ignorant, and absolutely unlettered, rustic of Stratford who never in his life wrote so much as his own name and in all probability was totally unable to read one single line of print.

The hour has come for revealing the truth. The hour has come when it is no longer necessary or desirable that the world should remain in ignorance that the Great Author of Shakespeare's Plays was himself alive when the Folio was published in 1623. The hour has come when all should know that this the greatest book produced by man was given to the world more carefully edited by its author as to every word in every column, as to every italic in every column, as to every apparent misprint in every column, than any book had ever before been edited, and more exactly printed than there seems any reasonable probability that any book will ever again be printed that may be issued in the future.

The hour has come when it is desirable and necessary to state with the utmost distinctness that

BACON IS SHAKESPEARE.

CHAPTER X

Bacon is Shakespeare.

Proved mechanically in a short chapter on the long word Honorificabilitudinitatibus.

The long word found in "Loves Labour's lost" was not created by the author of Shakespeare's plays. Mr. Paget Toynbee, writing in the *Athenoeum* (London weekly) of December 2nd 1899, tells us the history of this long word.

It is believed to have first appeared in the Latin Dictionary by Uguccione, called "Magnae Derivationes," which was written before the invention of printing, in the latter half of the twelfth century and seems never to have been printed. Excerpts from it were, however, included in the "Catholicon" of Giovanni da Geneva, which was printed among the earliest of printed books (that is, it falls into the class of books known as "incunabula," so called because they belong to the "cradle of printing," the fifteenth century).

In this "Catholicon," which, though undated, was printed before A.D. 1500, we read

> "Ab *honorifico, hic* et *hec honorificabilis, — le* et
> — hec honororificabilitas, — tis et *hec*
> *honorificabilitudinitas*, et est longissima dictio,
> que illo versu continetur —
> Fulget Honorificabilitudinitatibus iste."

It is perhaps not without interest to call the reader's attention to the fact that "Fulget hon|orifi |cabili|tudini|tatibus|iste" forms a neat Latin hexameter. It will be found that the revelation derived from the long word Honorificabilitudinitatibus is itself also in the form of a Latin hexameter.

The long word Honorificabilitudinitatibus occurs in the Quarto edition of "Loues Labor's Lost," which is stated to be "Newly corrected and augmented by

W. Shakespere." Imprinted in London by W.W. for Cutbert Burby. 1598.

This is the very first play that bore the name W. Shakespere, but so soon as he had attached the name W. Shakespere to that play, the great author Francis Bacon caused to be issued almost immediately a book attributed to Francis Meres which is called "Palladis Tamia, Wits Treasury" and is stated to be Printed by P. Short for Cuthbert Burbie, 1598. This is the same publisher as the publisher of the Quarto of "Loues Labor's lost" although both the Christian name and the surname are differently spelled.

This little book "Palladis Tamia, Wits Treasury" tells us on page 281, "As Plautus and Seneca are accounted the best for comedy and tragedy among the Latines, so Shakespeare among ye English, is the most excellent in both kinds for the stage; for Comedy, witness his Gentlemen of Verona, his Errors, his Love Labors lost, his Love Labours wonne, his Midsummers night dreame, and his Merchant of Venice: for Tragedy, his Richard the 2, Richard the 3, Henry the 4, King John, Titus Andronicus, and his Romeo and Juliet."

Here we are distinctly told that eleven other plays are also Shakespeare's work although only Loues Labors lost at that time bore his name.

We refer on page 138 to the reason why it had become absolutely necessary for the Author to affix a false name to all these twelve plays. For our present purpose it is sufficient to point out that on the very first occasion when the name W. Shakespere was attached to any play, viz., to the play called "Loues Labor's lost," the Author took pains to insert a revelation that would enable him to claim his own when the proper time should arrive. Accordingly he prepared the page which is found F 4 (the little book is not paged) in the Quarto of "Loues Labor's lost" which was published in 1598. A photo-facsimile of the page is shewn, Page 105, Plate 22.

So far as is known there never was any other edition printed until the play appeared in the Folio of 1623 under the name of "Loues Labour's lost," and we put before the reader a reduced facsimile of the whole page 136 of the 1623 Folio, on which the long word occurs, Page 86, Plate 20, and we give also an

exact full size photo reproduction of a portion of the first column of that page. Page 87, Plate 21.

On comparing the page of the Quarto with that of the Folio, it will be seen that the Folio page commences with the same word as does the Quarto and that each and every word, and each and every italic in the Folio is exactly reproduced from the Quarto excepting that Alms-basket in the Folio is printed with a hyphen to make it into two words. A hyphen is also inserted in the long word as it extends over one line to the next. The only other change is that the lines are a little differently arranged. These slight differences are by no means accidental, because Alms-basket is hyphened to count as two words and thereby cause the long word to be the 151st word. This is exceedingly important and it was only by a misprint in the Quarto that it incorrectly appears there as the 150th word. By the rearrangement of the lines, the long word appears on the 27th line, and the line, "What is A.B. speld backward with the horn on his head" appears as it should do on the 33rd line. At the time the Quarto was issued, when the trouble was to get Shakespere's name attached to the plays, these slight printer's errors in the Quarto — for they are printer's errors — were of small consequence, but when the play was reprinted in the Folio of 1623 all these little blemishes were most carefully corrected.

The long word Honorificabilitudinitatibus is found in "Loues Labour's lost" not far from the commencement of the Fifth Act, which is called Actus Quartus in the 1623 folio, and on Page 87, Plate 21, is given a full size photo facsimile from the folio, of that portion of page 136, in which the word occurs in the 27th line.

On lines 14, 15 occurs the phrase, "Bome boon for boon prescian, a little scratcht, 'twil serve." I do not know that hitherto any rational explanation has been given of the reason why this reference to the pedantic grammarian "Priscian" is there inserted.

The mention of Priscian's name can have no possible reference to anything apparent in the text, but it refers solely and entirely to the phrase which is to be formed by the transposition of the twenty-seven letters contained in the long

word Honorificabilitudinitatibus; and it was absolutely impossible that the citation of Priscian could ever have been understood before the sentence containing the information which is of the most important description had been "revealed." We say "revealed" because the riddle could never have been "guessed."

The "revealed" and "all revealing" sentence forms a correct Latin hexameter, and we will proceed to prove that it is without possibility of doubt or question the real solution which the "Author" intended to be known at some future time, when he placed the long word Honorificabilitudinitatibus, which is composed of twenty-seven letters, on the twenty-seventh line of page 136, where it appears as the 151st word printed in ordinary type.

The all-important statement which reveals the authorship of the plays in the most clear and direct manner (every one of the twenty-seven letters composing the long word being employed and no others) is in the form of a correct Latin hexameter, which reads as follows —

HI LUDI F. BACONIS NATI TUITI ORBI
These plays F. Bacon's offspring are preserved for the world.

This verse will scan as a spondaic hexameter as under

HI LU |DI F | BACO | NIS NA | TI TUI | TI ORBI

HI One long syllable meaning "these."

LUDI Two long syllables meaning "stage plays," and especially "stage plays" in contradistinction to "Circus games." (Suetonius Hist: Julius Caes: 10. Venationes autem Ludosque et cum collega et separatim edidit).

F, One long syllable. Now for the first time can the world be informed why the sneer "Bome boon for boon prescian, a little scratcht, 'twil serve" was inserted on lines 14, 15, page 136 of the folio of 1623. Priscian declares that F was a mute and Bacon mocks him for so doing. Ausonius while giving the

pronunciation of most letters of the alphabet does not afford us any information respecting the sound of F, but Quintilian xii. 10, s. 29, describes the pronunciation of the Roman F. Some scholars understand him as indicating that the Roman F had rather a rougher sound than the English F. Others agree with Dr. H.J. Roby, and are of opinion that Quintilian means that the Roman F was "blown out between the intervals of the teeth with no sound of voice." (See Roby's Grammar of the Latin language, 1881, xxxvi.) But Dr. A. Bos in his "Petit Traite de prononciation Latine," 1897, asserts that the old Latin manner of pronouncing F was effe. Even if Dr. A. Bos is correct it is not at all likely that effe was a dissyllable, but most probably it would be sounded very nearly like the Greek "[Greek: phi]," that is as "pfe." In any case (even if it were a dissyllable) F would, with the DI of LUDI, form two long syllables and scan as a spondee. The use of single consonants to form long or short syllables was very common among the Romans, but such appear mostly in lines impossible to quote.

But the Great Author was well acquainted with such instances, and in this same page 136, in lines 6, 7, 8, he gives an example, shewing that the letter "B," although silent in debt, becomes, when debt is spelled, one of the four full words — d e b t, each of which has to be counted to make up the number "151."[6]

This, which is an example of the great value and importance of what, in many of the plays, appears to be merely "silly talk" affords a strong additional evidence of the correctness of the "revealed" and "revealing" sentence which we shew was intended by the author to be constructed out of the long word. Bacon therefore was amply justified in making use of F as a long syllable to form the second half of a spondee.

BACONIS Three long syllables, the final syllable being long by position. Pedantic grammarians might argue that natus being a participle ought not to govern a genitive case, but should be followed by a preposition with the ablative case, and that we ought to say "e Bacone nati" or "de Bacone nati." Other pedants have declared that natus is properly, i.e., classically, said of the mother only, although in low Latin, such as the Vulgate, we find 1 John v. 2, "Natos

Dei," "born of God." But the Author of the plays, who instead of having "small Latin and less Greek" knew "*All* Latin and very much Greek," was well aware that Vergil, Aeneid i. 654 (or 658 when the four additional lines are inserted at the beginning) gives us "Maxima natarum Priami," "greatest of the daughters of Priam," and in Aeneid ii. 527 "Unus natorum Priami," "one of the sons of Priam." There exists therefore the highest classical authority for the use of "Nati" in the sense of "Sons" or "offspring" governing a genitive case. "F. Baconis nati," "Francis Bacon's offspring," is therefore absolutely and classically correct.

NATI Two long syllables. A noun substantive meaning as shewn above "sons" or "offspring."

TUITI Two short syllables and one long syllable, which last is elided and disappears before the "o" of orbi. Tuiti which is the same word as tuti is a passive past participle meaning saved or preserved. It is derived from tueor, which is generally used as a deponent or reflexive verb, but tueor is used by Varro and the legal writers as a passive verb.

ORBI Two long syllables. The word orbi may be either the plural nominative of orbus meaning "deprived" "orphaned," or it may be the dative singular of Orbis meaning "for the world." Both translations make good sense because the plays are "preserved for the world" and are "preserved orphaned." The present writer prefers the translation "for the world," indeed he thinks that to most classical scholars "tuiti orbi," "preserved discarded," looks almost like a contradiction in terms.

Note on Honorficabilitudinitatibus

BACONIS. — On page 131 is shewn a photogravure of the title page of Bacon's "De Augmentis," 1645, which is in fact a pictorial representation of an anagram "Hi ludi F. Baconis nati tuiti orbi." On this title page we find "Baconis" used as the genitive of Bacon's name in Latin. Baconis is also found in XIII th century manuscript copies of Roger Bacon's works, where the title reads "Opus minus Fratris Rogeri Baconis," and in 1603 there was published in 12° at Frankfurt "Rogeri Baconis … De Arte Chymiae."

TUITI. — Pedanticgrammarians such as Priscian whom the author mocks at in the line “Bome boom for boon precian, a little scratcht, ‘twil serve,” falsely tel us that there is a passive verb “tueor” with a past participle “tutus.” As a matter of fact it is the same verb “tueor” that is used both as a passive and as a deponent, and “tutus” or “tuitus” may be used indifferently at the pleasure of the writer. Sallust uses “tutus,” not “tuitus,” as the past participle of the deponent verb.

Opposite to the next page is shewn a type transcript of the cover or outside page of a collection of manuscripts in the possession of the Duke of Northumberland, which were discovered in 1867 at Northumberland House. Three years later, viz., in 1870, James Spedding published a thin little volume entituled “A Conference of Pleasure,” in which he gave a full size Facsimile of the original of the outside page which is here shewn in *reduced type* facsimile. He also gave a few particulars of the MSS. themselves.

In 1904 Mr. Frank J. Burgoyne brought out a Collotype Facsimile of every page that now remains of the collection of MSS. in an edition limited to 250 copies I a fine Royal Quarto at the price of £4 4s. 0d. O f the MSS. mentioned on the cover nine now remain, and of these, six are certainly by Francis Bacon; the first being written by him for a masque or “fanciful devise” which Mr. Spedding thinks was presented at the Court of Elizabeth in 1592.

The list of contents was written upon this outside page about 1597, and among those original contents which are now missing were Richard II. and Richard III. Mr. Spedding was satisfied that these were the so-called Skakespearean plays. There are also the tiles of various other works to which it is not now necessary to allude, but the reader’s attention should be especially directed to the (so-called) scribblings. Mr. Spedding says: “I find nothing either in these later scribblings or in what remains of the book itself to indicate a date later than the reign of Elizabeth.” The “scribblings” are therefore written by a contemporary hand. For the purpose of reference I have placed the letters *a, b, c, d, e*, outside of the facsimile.

(*a*) “honorificabilitudine.” This curious long word when taken in conjunction with the words “your William Shakespeare.” which are also found upon this page, appears to have some reference to the same curious long word which is found in the ablative plural in “Loves Labour’s lost,” which appeared I 1597, and was the play to which Shakespeare’s name was for the first time attached, and, as I shew, in Chapter X., p. 84, it was placed there in order to give with absolute certainty a key to the real authorship.

(*b*) “By Mr ffrauncis William Shakespeare Baco” — with ffrauncis written upside down over it and your/yourself written upside down at the commencement of the line. Baco would require Baconis as its genitive.

(*c*) “revealing day through every crany peepes.” We think that this is an accurate statement of the revelations here afforded.

(*d*) your
“William Shakespeare.” Almost directly above this
your
appears also William Shakespeare.

(*e*) The three curious scrolles at the top right-hand corner are very similar to the scrolls which are found upon the title page of a law book entitled, “Les Tenures de Monsieur Littleton,” printed in 1591, in the possession of the writer, which is throughout noted in what the authorities at the British Museum say is undoubtedly the handwriting of Francis Bacon.

As I have pointed out upon page 114 and upon various other pages in my book “upside down” printing is a device continually employed by the authors of certain books in order to afford revelations concerning Bacon and Shakespeare. As a whole this curious scribbled page affords remarkable evidence that William Shakespeare is “yourself” Francis Bacon.

Now and now only can a reasonable explanation be given for the first time of the purpose of the reference to Priscian, in lines 14 and 15, Plate 21, Page 87. And it is a singular circumstance that so far as the writer is aware not one of the critics has perceived that the mockery of Priscian forms a neat English iambic hexameter, indeed, in almost all modern editions of the Shakespeare plays, both the form and the meaning of the line have been utterly destroyed. In the original the line reads "Bome boon for boon prescian, a little scracht, 'twil serve."

Perhaps the reader will be enabled better to understand the sneer and the mockery by reading the following couplet —

A fig for old Priscián, a little scrátcht, 'twil serve
A poet súrely need not áll his rúles observe.

And we still more perfectly understand the purpose of the hexameter form of the reference to Priscian if we scan the line side by side with the "revealed" interpretation of the long word honorificabilitudinitatibus.

Bome boon | for boon | prescian | a lit | tle scratcht | 'twil serve
HI LU | DI F | BACO | NIS NA | TI TUI | TI ORBI

These plays F Bacon's offspring are preserved for the world.

This explanation of the real meaning to be derived from the long word honorificabilitudinitatibus seems to be so convincing as scarcely to require further proof. But the Author of the plays intended when the time had fully come for him to claim his own that there should not be any possibility of cavil or doubt. He therefore so arranged the plays and the acts of the plays in the folio of 1623 that the long word should appear upon the 136th page, be the 151st word thereon, should fall on the 27th line and that the interpretation should indicate the numbers 136 and 151, thus forming a mechanical proof so positive that it can neither be misconstrued nor explained away, a mechanical proof that provides an evidence which absolutely compels belief.

The writer desires especially to bring home to the reader the manifest fact that the revealed and revealing sentence must have been constructed before the play of “Loues Labor’s lost” first appeared in 1598, and that when the plays were printed in their present form in the 1623 folio the scenes and the acts of the preceding plays and the printing of the columns in all those plays as well as in the play of “Loues Labour’s lost” required to be arranged with extraordinary skill in order that the revealing page in the 1623 folio should commence with the first word of the revealing page in the original quarto of 1598, and that that page should form the 136th page of the folio, so that the long word “Honorificabilitudinitatibus” should appear on page 136, be the 151st word, and fall upon the 27th line.

Bacon tells us that there are 24 letters in the alphabet (*i* and *j* being deemed to be forms of the same letter, as are also *u* and *v*). Bacon was himself accustomed frequently to use the letters of the alphabet as numerals (the Greeks similarly used letters for numerals). Thus A is 1, B is 2 … Y is 23, Z is 24. Let us take as an example Bacon’s own name — B=2, a=1, c=3, O=14, n=i3; all these added together make the number 33, a number about which it is possible to say a good deal.[7] We now put the numerical value to each of the letters that form the long word, and we shall find that their total amounts to the number 287, thus:

H O N O R I F I C A B I L I T U
8 14 13 14 17 9 6 9 3 1 2 9 11 9 19 20

D I N I T A T I B U S
4 9 13 9 19 1 19 9 2 20 18 = 287

From a word containing so large a number of letters as twenty-seven it is evident that we can construct very numerous words and phrases; but I think it “surpasses the wit of man” to construct any “sentence” other than the “revealed sentence,” which by its construction shall reveal not only the number of the page on which it appears — which is 136 — but shall also reveal the fact that the long

word shall be the 151st word printed in ordinary type counting from the first word.

On one side of the facsimile reproduction of part of page 136 of the 1623 folio, numbers are placed shewing that the long word is on the 27th line, which was a skilfully purposed arrangement, because there are 27 letters in the word. There is also another set of numbers at the other side of the facsimile page which shews that, counting from the first word, the long word is the 151st word. How is it possible that the revealing sentence, "Hi ludi F. Baconis nati tuiti orbi," can tell us that the page is 136 and the position of the long word is the 151st word? The answer is simple. The numerical value of the initial letters and of the terminal letters of the revealed sentence, when added together, give us 136, the number of the page, while the numerical value of all the other letters amount to the number 151, which is the number of words necessary to find the position of the long word "Honorificabilitudinitatibus," which is the 151st word on page 136, counting those printed in ordinary type, the italic words being of course omitted.

The solution is as follows

HI
LUDI
F
BACONIS
NATI
TUITI
ORBI

the initial letters of which are

H L F B N T O

their numerical values being

8 11 6 2 13 19 14 = total 73

and the terminal letters are

I I S I I I

their numerical values being

9 9 18 9 9 9 = total 63

Adding this 63 to 73 we get 136

while the intermediate letters are

U D A C O N I A T U I T R B

their numerical values being

20 4 1 3 14 13 9 1 19 20 9 19 17 2 = 151

Total 287

The reader thus sees that it is a fact that in the "revealed" sentence the sum of the numerical values of the initial letters, when added to the sum of the numerical values of the terminal letters, do, with mathematical certainty produce 136, the number of the page in the first folio, which is 136, and that the sum of the numerical values of the intermediate letters amounts to 151, which gives the position of the long word on that page, which is the 151st word in ordinary type. These two sums of 136 and 151, when added together, give 287, which is the sum of the numerical value of all the letters of the long word "Honorificabilitudinitatibus," which, as we saw on page 99, amounted to the same total, 287.

As a further evidence of the marvellous manner in which the Author had arranged the whole plan, the long word of 27 letters is placed on the 27th line. Can anyone be found who will pretend to produce from the 27 letters which form the word "Honorificabilitudinitatibus" another sentence which shall also tell the number of the page, 136, and that the position of the long word on the page is the 151st word?

I repeat that to do this "surpasses the wit of man," and that therefore the true solution of the meaning of the long word "Honorificabilitudinitatibus," about

which so much nonsense has been written, is without possibility of doubt or question to be found by arranging the letters to form the Latin hexameter.

HI LUDI F. BACONIS NATI TUITI ORBI

These plays F. Bacon's offspring are preserved for the world.

It is not possible to afford a clearer mechanical proof that

THE SHAKESPEARE PLAYS ARE BACON'S OFFSPRING.

It is not possible to make a clearer and more definite statement that

BACON IS THE AUTHOR OF THE PLAYS.

It is not possible that any doubt can any longer be entertained respecting the manifest fact that

BACON IS SHAKESPEARE.

CHAPTER XI.

On the revealing page 136 in “Loves Labour’s lost.”

In the previous chapter it was pointed out that using letters for numbers, Bacon’s name is represented by 33.

B A C O N .
2 1 3 14 13 = 33

and that the long word possesses the numerical value of 287.

H O N O R I F I C A B I L I T U
8 14 13 14 17 9 6 9 3 1 2 9 11 9 19 20
D I N I T A T I B U S
4 9 13 9 19 1 19 9 2 20 18 = 287

In the Shakespeare folio, Page 136, shewn in Plate 20 and Plate 21, on Pages 86-7, ON LINE 33, we read “What is Ab speld backward with the horn on his head?”

The answer which is given is evidently an incorrect answer, it is “Ba, puericia with a horne added,” and the Boy mocks him with “Ba most seely sheepe, with a horne: you heare his learning.”

The reply should of course have been in Latin. The Latin for a horn is cornu. The real answer therefore is “Ba corn-u fool.”

This is the exact answer you might expect to find on the line 33, since the number 33 indicates Bacon’s name. And now, and now only, can be explained the very frequent use of the ornament representing a Horned Sheep, inside and outside “Baconian” books, under whatever name they may be known. An example will be found at the head of the present chapter on page 103. The uninitiated are still “informed” or rather “misinformed” that this ornament alludes to the celebrated Golden Fleece of the Argonauts and they little suspect that they have been purposely fooled, and that the real reference is to Bacon.

It should be noted here that in the Quarto of "Loues Labor's lost," see Plate 22, Page 105, if the heading "Loues Labor's lost" be counted as a line, we read on the 33rd line: "Ba most seely sheepe with a horne: you heare his learning." This would direct you to a reference to Bacon, although not so perfectly as the final arrangement in the folio of 1623.

Proceeding with the other lines in the page, we read: —

"Quis quis, thou consonant?"

This means "Who, who"? [which Bacon] because in order to make the revelation complete we must be told that it is "Francis" Bacon, so as to leave no ambiguity or possibility of mistake. How then is it possible that we can be told that it is Francis Bacon? We read in answer to the question:

"Quis quis, thou consonant?
The last of five vowels if you repeat them, the
fifth if I.
I will repeat them a, e, I.
The Sheepe, the other two concludes it o, u."

Now here we are told that a, e, I, o, u is the answer to Quis quis, and we must note that the I is a capital letter. Therefore a is followed by e, but I being a capital letter does not follow e but starts afresh, and we must read I followed by o, and o followed by u.

Is it possible that these vowels will give us the Christian name of Bacon? Can it be that we are told on what page to look? The answer to both these questions is the affirmative "Yes."

The great Folio of Shakespeare was published in 1623, and in the following year, 1624, there was brought out a great Cryptographic book by the "Man in the Moon." We shall speak about this work presently; suffice for the moment to say that this book was issued as the key to the Shakespeare Folio of 1623. If we turn

to page 254 in the Cryptographic book we shall find Chapter XIV. “De Transpositione Obliqua, per dispositionem Alphabeti.”

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This chapter describes how, by means of square tables, one letter followed by another letter will give the cypher letter. On the present page appears the square, which is shown in Plate 24, which enables us to answer the question “Quis quis.”

By means of this square we perceive that “a” followed by “e” gives us the letter F, that “I” followed by “o” gives us the letter R, and that “o” followed by “u” gives us the letter A. The answer therefore to Quis quis (which Bacon do you mean) is Fra [Bacon]. *See* Plate 23, Page 107.

But what should induce us to look at this particular chapter on page 254 of the Cryptographic book for the solution? The answer is clearly given in the wonderful page 136 of the 1623 Folio of Shakespeare.

As has been pointed out the numerical value of the long word Honorificabilitudinitatibus is 287, and the numerical value of Bacon is 33. We have found Bacon from Ba with a horn, and we require the remainder of his name, accordingly deduct 33 from 287, and we get the answer 254 which is the number of the required page in the Cryptographic book of 1624. But the wise Author knew that someone would say “How does this apply to the 1598 Quarto published twenty-six years before the great Cryptographic book appeared?” On Plate 24, Page 108, taken from page 255 of the Cryptographic book of 1624, it is shewn that the following lines are attached to the square

“Quarta Tabula, ex Vigenerio, pag. 202.b, etc.”
=Square table taken from Vigenerio, page 202.b.

This reference is to the work entitled, “Traicte des chiffres ou secretes manieres d’escrire”: par Blaise de Vigenere, which was published in Paris in

1586. Spedding states (Vol. I. of "Bacon's Letters and Life," p. 6-8) that Francis Bacon went in 1576 to France, with Sir Amias Paulet, the English Ambassador. Bacon remained in France until 1578-9, and when in 1623 he published his "De Augmentis Scientiarum" — (the Advancement of Learning) he tells us that while in Paris he invented his own method of secret writing. *See* Spedding's "Works of Bacon," Vol. 4, p. 445.

The system which Bacon then invented is now known as the Biliteral Cypher, and it is in fact practically the same as that which is universally employed in Telegraphy under the name of the Morse Code.

A copy of Vigenere's book will be found in the present writer's Baconian library, for he knew by the ornaments and by the other marks that Bacon must have had a hand in its production.

Anyone, therefore, reading the Quarto edition of "Loues Labor's lost," 1598, and putting *two* and *two* together will find on p. 202.b of Vigenere's book, the Table, of which a facsimile is here given, Plate 25, Page 109. This square is even more clear than the square table in the great Cryptographic book.

Thus, upon the same page 136 in the Folio, or on F. 4 in the Quarto, in addition to Honorificabilitudinitatibus containing the revealing sentence "Hi ludi F Baconis nati tuiti orbi"— "These plays F Bacon's offspring are entrusted to the world," we see that we are able to discover on line 33 the name of Bacon, and by means of the lines which follow that it is Fra. Bacon who is referred to.

Before parting with this subject we will give one or two examples to indicate how often the number 33 is employed to indicate Bacon.

We have just shewn that on page 136 of the Folio we obtain Bacon's name on line 33. On page 41 we refer to Ben Jonson's "Every man out of his Humour." In an extremely rare early Quarto [*circa* 1600] of that play some unknown hand has numbered the pages referring to Sogliardo (Shakespeare) and Puntarvolo (Bacon) 32 and 32 repeated. Incorrect pagination is a common method used in "revealing" books to call attention to some statements, and anyone can perceive that the second 32 is really 33 and as usual reveals something about Bacon.

On page 61 we point out that on page 33 of the little book called "The Great Assizes holden in Parnassus" Apollo speaks. As the King speaks in a Law Court only through the mouth of his High Chancellor so Apollo speaks in the supposititious law action through the mouth of his Chancellor of Parnassus, who is Lord Verulam, *i.e.* Bacon. Thus again Bacon is found on Page 33. The writer could give very numerous examples, but these three which occur incidentally will give some idea how frequently the number 33 is used to indicate Bacon.[8]

The whole page 136 of the Folio is cryptographic, but we will not now proceed to consider any other matters contained upon it, but pass on to discuss the great Cryptographic book which was issued under Bacon's instructions in the year following the publication of the great Folio of Shakespeare. Before, however, speaking of the book, we must refer to the enormous pains always taken to provide traps for the uninitiated.

If you go to Lunaeburg, where the Cryptographic book was published, you will be referred to the Library at Wolfenbuttel and to a series of letters to be found there which contain instructions to the engraver which seem to prove that this book has no possible reference to Shakespeare. We say, seem to prove, for the writer possesses accurate photographs of all these letters and they really prove exactly the reverse, for they are, to those capable of understanding them, cunningly devised false clues, quite clear and plain. That these letters are snares for the uninitiated, the writer, who possesses a "Baconian" library, could easily prove to any competent scholar.

Before referring to the wonderful title page of the Cryptographic book which reveals the Bacon-Shakespeare story, it is necessary to direct the reader's attention to Camden's "Remains," published 1616. We may conclude that Bacon had a hand in the production of this book, since Spedding's "Bacon's Works," Vol. 6, p. 351, and Letters, Vol. 4, p. 211, informs us that Bacon assisted Camden with his "Annales."

In Camden's "Remains," 1616, the Chapter on Surnames, p. 106, commences with an ornamental headline like the head of Chapter 10, p. 84, but printed

"*upside down*." A facsimile of the heading in Camden's book is shewn in Plate 26, page 113.

This trick of the upside down printing of ornaments and even of engravings is continually resorted to when some revelation concerning Bacon's works is given. Therefore in Camden's "Remains" of 1616 in the Chapter on Surnames, because the head ornament is printed upside down, we may be perfectly certain that we shall find some revelation concerning Bacon and Shakespeare.

Accordingly on p. 121 we find as the name of a village "Bacon Creping." There never was a village called "Bacon Creping." And on page 128 we read "such names as Shakespeare, Shotbolt, Wagstaffe." In referring to the great Cryptographic book, we shall realise the importance of this conjunction of names.

On Plate 27, Page 115, we give a reduced facsimile of the title page, which as the reader will see, states in Latin that the work is by Gustavus Selenus, and contains systems of Cryptographic writing, also methods of the shorthand of Trithemius. The Imprint at the end, under a very handsome example of the double A ornament which in various forms is used generally in books of Baconian learning, states that it was published and printed at Lunaeburg in 1624. Gustavus Selenus we are told in the dedicatory poems prefixed to the work is "Homo lunae" [the man in the Moon].

Look first at the whole title page; on the top is a tempest with flaming beacons, on the left (of the reader) is a gentleman giving something to a spearman, and there are also other figures; on the right is a man on horseback, and at the bottom in a square is a much dressed up man taking the "Cap of Maintenance" from a man writing a book.

Examine first the left-hand picture shewn enlarged, Plate 28, Page 118. You see a man, evidently Bacon, giving his writing to a Spearman who is dressed in actor's boots (see Stothard's painting of Falstaff in the "Merry Wives of Windsor" wearing similar actor's boots, Plate 32, Page 127). Note that the

Spearman has a sprig of bay in the hat which he holds in his hand. This man is a Shake-Spear, nay he really is a correct portrait of the Stratford householder, which you will readily perceive if you turn to Dugdale's engraving of the Shakespeare bust, Plate 5, Page 14. In the middle distance the man still holding a spear, still being a Shake-Speare, walks with a staff, he is therefore a Wagstaffe. On his back are books — the books of the plays. In the sky is seen an arrow, no, it is not sufficiently long for an arrow, it is a Shotbolt (Shakespeare, Wagstaffe, Shotbolt, of Camden's "Remains"). This Shotbolt is near to a bird which seems about to give to it the scroll it carries in its beak. But is it a real bird? No, it has no real claws, its feet are Jove's lightnings, verily, "it is the Eagle of great verse."

Next, look on Plate 29, Page 119, which is the picture on the right of the title page. Here you see that the same Shakespear whom we saw in the left-hand picture is now riding on a courser. That he is the same man is shewn by the sprig of bay in his hat, but he is no longer a Shakespear, he is a Shake-*spur*. Note how much the artist has emphasised the drawing of the spur. It is made the one prominent thing in the whole picture. We refer our reader to "The Returne from Pernassus" (see pp. 47-48) where he will read,

"England affordes those glorious vagabonds
That carried earst their fardels on their backes
Coursers to ride on through the gazing streetes."

Now glance at the top picture on the title page (see Plate 27, Page 115,) which is enlarged in Plate 30, Page 122. Note that the picture is enclosed in the magic circle of the imagination, surrounded by the masks of Tragedy, Comedy, and Farce (in the same way as Stothard's picture of the "Merry Wives of Windsor," Plate 32, Page 127).

The engraving represents a tempest with beacon lights; No; it represents
"The Tempest" of Shakespeare and tells you that the play is filled with

Bacon lights. (In the sixteenth century Beacon was pronounced Bacon.
"Bacon great Beacon of the State.")

We have already pointed out that "The Tempest," as Emile Montegut shewed in the *Revue des Deux Mondes* in 1865, is a mass of Bacon's revelations concerning himself.

At the bottom (see Plate 27, Page 115, and Plate 31, Page 123), within the "four square corners of fact," surrounded with disguised masks of Tragedy, Comedy, and Farce, is shewn the same man who gave the scroll to the Spearman, see Plate 29, Page 118 (note the pattern of his sleeves). He is now engaged in writing his book, while an Actor, very much overdressed and wearing a mask something like the accepted mask of Shakespeare, is lifting from the real writer's head a cap known in Heraldry as the "Cap of Maintenance." Again we refer to our quotation on page 48.

"Those glorious vagabonds….
Sooping it in their glaring Satten sutes."

Is not this masquerading fellow an actor "Sooping it in his glaring Satten sute"? The figure which we say represents Bacon, see Plate 28, wears his clothes as a gentleman. Nobody could for a moment imagine that the masked creature in Plate 31 was properly wearing his own clothes. No, he is "sooping it in his glaring Satten sute."

The whole title page clearly shows that it is drawn to give a revelation about Shakespeare, who might just as well have borne the name of Shotbolt or of Wagstaffe or of Shakespur, see "The Tempest," Act v., Scene I.

"The strong bass'd promontorie
Have I made shake, and by the spurs pluckt up."

There are also revealing title pages in other books, shewing a spear and an actor wearing a single spur only (see Plate 35, Page 153).

It will be of interest to shew another specially revealing title page, which for upwards of a hundred years remained unaltered as the title page to Vol. I. of Bacon's collected works, printed abroad in Latin. A different engraving, representing the same scene was also published in France. These engravings, however, were never reproduced or used in England, because the time for revelation had not yet come. Bacon is shewn seated (see Plate 33, Page 131). Compare his portrait with the engraving of the gentleman giving his scroll to the Spearman in the Gustavus Silenus frontispiece, Plate 27, Page 115, and Plate 28, Page 118. Bacon is pointing with his right hand in full light to his open book, while his left hand in deepest shadow is putting forward a figure holding in both its hands a closed and clasped book, which by the cross lines on its side (the accepted symbol of a mirror) shows that it represents the mirror up to Nature, i.e., Shakespeare's plays. Specially note that Bacon puts forward with his LEFT hand the figure holding the book which is the mirror up to Nature. In the former part of this treatise the writer has proved that the figure that forms the frontispiece of the great folio of Shakespeare's plays, which is known as the Droeshout portrait of Wm. Shakespeare, is really composed of two LEFT arms and a mask. The reader will now be able to fully realise the revelation contained in Droeshout's masked figure with its two left arms when he examines it with the title page shown, Plate 33, Page 131.

Bacon is putting forward what we described as a "figure"; it is a "man" with false breasts to represent a woman (women were not permitted to act in Bacon's time), and the man is clothed in a goat skin. Tragedos was the Greek word for a goat skin, and Tragedies were so called because the actors were dressed in goat skins. This figure therefore represents the Tragic Muse. Here in the book called *De Augmentis Scientiarum*, which formed one part of the Great Instauration, is placed an engraving to show that another part of the Great Instauration known as Shakespeare's Plays was issued LEFT-HANDEDLY, that is, was issued under the name of a mean actor, the actor Shakespeare. This title page is very revealing, and should be taken in conjunction with the title page of the

Cryptographic book which under the name of Gustavus Silenus, "*Homo lunae*," the "Man in the Moon," was published in 1624 in order to form a key to certain cyphers in the 1623 Folio of Shakespeare's Plays.

These two title pages were prepared with consummate skill in order to reveal to the world, when the time was ripe, that

BACON IS SHAKESPEARE.

CHAPTER XII.

The “Householder of Stratford.”

We have in Chapter II. printed Mr. George Hookham’s list of the very few incidents recorded concerning Shakespeare’s life, but, as we have already shewn, a great deal of the “authentic history” of the Stratford clown has in fact been revealed to us. Ben Jonson calls the Stratford man who had purchased a coat of arms “Sogliardo” (scum of the earth), says he was brother to Sordido, the miser (Shakspeare was a miser), describes him as an essential clown (that means that he was a rustic totally unable to read and write), shews that he speaks “i’ th’ straungest language,” and calls Heralds “Harrots,” and finally sums him up definitely as a “Swine without a head, without braine, wit, anything indeed, Ramping to Gentilitie.” In order that there should be no mistake as to the man who is referred to, “Sogliardo’s” motto is stated to be “Not without Mustard,” Shakespeare’s motto being “Not without right” (Non sanz droict). Ben Jonson’s account of the real Stratford man is confirmed by Shakespeare’s play of “As You Like it,” where Touchstone, the courtier playing clown, says, “It is meat and drinke to me to see a clowne” (meaning an essential clown, an uneducated rustic); yet he salutes him as “gentle,” shewing that the mean fellow possesses a coat of arms.

The Clown is born in the Forest of Ardennes (Shakespeare’s mother’s name was Arden). He is rich, but only so-so rich, that is rich for a clowne (New Place cost only £60). He says he is wise, and Touchstone mocks him with Bacon’s words, “The Foole doth think he is wise, but the wise man knows himself to be a Fool.” He says he has “a prettie wit” (pretty wit is the regular orthodox phrase as applied to Shakespeare). But when asked whether he is learned, he distinctly replies “No,” which means that he says that he cannot read one line of print. A man who could read one line of print was at that period in the eye of the law “learned,” and could not be hanged when convicted for the first time except for murder. If any persons be found to dispute the fact that the reply “No” to the

question “Art thou learned?” meant in Queen Elizabeth’s day “I cannot read one line of print” such persons must be totally unacquainted with Law literature.[9]

The play “As You Like it” confirms Ben Jonson’s characterisation of Shakespeare being “an essential clowne.” Next let us turn to Ratsei’s *Ghost* (see p. 49), which, as Mr. Sidney Lee, in his “Life of William Shakespeare,” p. 159, 1898 ed., confesses, refers to Shakespeare. Ratsei advises the young actor to copy Shakespeare, “and to feed upon all men, to let none feede upon thee” (meaning Shakespeare was a cruel usurer). As we shew, page 53, Grant White says: “The pursuit of an impoverished man for the sake of imprisoning him and depriving him both of the power of paying his debts and supporting himself and his family, is an incident in Shakespeare’s life which it requires the utmost allowance and consideration for the practice of the time and country to enable us to contemplate with equanimity — satisfaction is impossible.”

Ratsei continues, “Let thy hand be a stranger to thy pocket” [like the miser, Shakespeare], “thy hart slow to perform thy tongues promise” [like the lying rascal Shakespeare], “and when thou feelest thy purse well lined, buy thee a place of lordship in the country” [as Shakespeare had bought New Place, Stratford] “that, growing weary of playing, thy mony may there bring thee to dignitie and reputation” [as Shakespeare obtained a coat of arms], “then thou needest care for no man, nor not for them that before made thee prowd with speaking their words upon the stage.” This manifestly refers to two things, one that Shakespeare when he bought New Place, quitted London and ceased to act; the other that he continually tried to exact more and more “blackmail” from those to whom he had sold his name.

Now we begin at last to understand what we are told by Rowe, in his “Life of Shakespeare,” published in 1709, that is, 93 years after Shakespeare’s death in 1616, when all traces of the actual man had been of set purpose obliterated, because the time for revealing the real authorship of the plays had not yet come. Rowe, page x., tells us: “There is one Instance so singular in the Magnificence of this Patron of Shakespeare’s, that if I had not been assur’d that the Story was handed down by Sir William D’Avenant, who was probably very well

acquainted with his Affairs, I should not have ventured to have inserted, that my Lord Southampton, at one time, gave him a thousand Pounds, to enable him to go through with a Purchase which he heard he had a mind to."

This story has been hopelessly misunderstood, because people did not know that a large sum had to be paid to Shakespeare to obtain his consent to allow his name to be put to the plays, and that New Place had to be purchased for him, 1597 (the title deeds were not given to him for five or six years later), and that he had also to be sent away from London before "W Shakespeare's" name was attached to any play, the first play bearing that name being, as we have already pointed out, page 89, "Loues Labor's lost," with its very numerous revelations of authorship. Then, almost immediately, the world is informed that eleven other plays had been written by the same author, the list including the play of "Richard II."

The story of the production of the play of "Richard II." is very curious and extremely instructive. It was originally acted with the Parliament scene, where Richard II. is made to surrender, commencing in the Folio of 1623 with the words —

"Fetch hither Richard, that in common view he may surrender,"

continuing with a description of his deposition extending over 167 lines to the words —

"That rise thus nimbly by a true king's fall."

This account of the deposition of a king reached Queen Elizabeth's ears; she was furiously angry and she exclaimed: "Seest thou not that I am Richard II."

A copy of the play without any author's name was printed in 1597, omitting the story of the deposition of Richard II.; this was followed by a second and probably a third reprint in 1597, with no important alterations, but still without any author's name. Then, after the actor had been sent away to Stratford, Shakespeare's name was put upon a fourth reprint, dated 1598.

The story of Richard II.'s deposition was not printed in the play till 1608, five years after the death of Queen Elizabeth.[10]

This history of the trouble arising out of the production of the play of "Richard II." explains why a name had to be found to be attached to the plays. Who would take the risk? An actor was never "hanged," he was often whipped, occasionally one lost his ears, but an actor of repute would probably have refused even a large bribe. There was, however, a grasping money-lending man, of little or no repute, that bore a name called Shaxpur, which might be twisted into Bacon's pen-name Shake-Speare, and that man was secured, but as long as he lived he was continually asking for more and more money. The grant of a coat of arms was probably part of the original bargain. At one time it seems to have been thought easier to grant arms to his father. This, however, was found impossible. But when in 1597 Bacon's friend Essex was Earl Marshal and chief of the Heralds' College, and Bacon's servant Camden (whom Bacon had assisted to prepare the "Annales" — see Spedding's "Bacon's Works," Vol. 6, p. 351, and Letters, Vol. 4, p. 211), was installed as Clarenceux, King-of-Arms, the grant of arms to Shakespeare was recognised, 1599. Shakespeare must have been provisionally secured soon after 1593, when the "Venus and Adonis" was signed with his name, because in the next year, 1594, "The Taming of a Shrew" was printed, in which the opening scene shews a drunken "Warwickshire" rustic [Shakspeare was a drunken Warwickshire rustic], who is dressed up as "My lord," for whom the play had been prepared. (In the writer's possession there is a very curious and absolutely unique masonic painting revealing "on the square" that the drunken tinker is Shakspeare and the Hostess, Bacon.)

The early date at which Shakspeare had been secured explains how in 1596 an application for a grant of arms seems to have been made (we say seems) for the date may possibly be a fraud like the rest of the lying document.

We have referred to Shakspeare as a drunken Warwickshire rustic who lived in the mean and dirty town of Stratford-on-Avon. There is a tradition that Shakespeare as a very young man was one of the Stratfordians selected to drink against "the Bidford topers," and with his defeated friends lay all night senseless under a crab tree, that was long known as Shakespeare's crab tree.

Shakespeare's description of the Stratford man as the drunken tinker in "The Taming of a Shrew" shews that the actor maintained his "drunken" character. This habit seems to have remained with him till the close of his life, for Halliwell-Phillipps says: "It is recorded that the party was a jovial one, and according to a somewhat late but apparently reliable tradition when the great dramatist [Shakespeare of Stratford] was returning to New Place in the evening, he had taken more wine than was conducive to pedestrian accuracy. Shortly or immediately afterwards he was seized by the lamentable fever which terminated fatally on Friday, April 23rd."

The story of his having to leave Stratford because he got into very bad company and became one of a gang of deer-stealers, has also very early support.

We have already proved that Shakspeare could neither read nor write. We must also bear in mind that the Stratford man never had any reputation as an actor.

Rowe, p. vi., thus writes: "His Name is Printed, as the Custom was in those Times, amongst those of the other Players, before some old Plays,[11] but without any particular Account of what sort of Parts he us'd to play; and tho' I have inquir'd I could never meet with any further Account of him this way than that the top of his Performance was the Ghost in his own Hamlet." The humblest scene-shifter could play this character, as we shall shew later. What about being manager of a Theatre? Shakspeare never was manager of a Theatre. What about being master of a Shakespeare company of actors? There never existed a Shakespeare company of actors. What about ownership of a Theatre? Dr. Wallace, says in the *Times* of Oct. 2nd 1909, that at the time of his death Shakespeare owned one fourteenth of the Globe Theatre, and one-seventh of the Blackfriars Theatre. The profit of each of these was probably exceedingly small. The pleadings, put forth the present value at £300 each, but as a broad rule, pleadings always used to set forth at least ten times the actual facts. In the first case which the writer remembers witnessing in Court, the pleadings were 100 oxen, 100 cows, 100 calves, 100 sheep, and 100 pigs, the real matter in dispute being one cow and perhaps one calf. If we assume, therefore, that the total

capital value of the holding of W. Shakespeare in both theatres taken together amounted to £60 in all, we shall probably, even then, considerably over-estimate their real worth. Now having disposed of the notion that Shakespeare was ever an important actor, was ever a manager of a Theatre, was ever the master of a company of actors, or was ever the owner of any Theatre, let us consider what Rowe means by the statement that the top of his performance was the Ghost in "Hamlet."

This grotesque and absurd fable has for two hundred years been accepted as an almost indisputable historical fact. Men of great intelligence in other matters seem when the life of Shakespeare of Stratford-on-Avon is concerned, quite prepared to refuse to exercise either judgment or common sense, and to swallow without question any amount of preposterous nonsense, even such as is contained in the above statement. The part of the Ghost in the play of "Hamlet" is one of the smallest and most insignificant possible, and can be easily played by the most ignorant and most inexperienced of actors. All that is required is a suit of armour with somebody inside it, to walk with his face concealed, silently and slowly a few times across the stage. Then on his final appearance he should say a few sentences (84 lines in the Folio, 1623), but these can be and occasionally are spoken by some invisible speaker in the same manner as the word "*Swear*" which is always growled out by someone concealed beneath the stage. No one knows, and no one cares, for no one sees who plays the part, which requires absolutely no histrionic ability. Sir Henry Irving, usually, I believe, put two men in armour upon the stage, in order to make the movements of the Ghost more mysterious. What then can be the meaning of the statement that the highest point to which the actor, Shakespeare, attained was to play the part of the Ghost in "Hamlet"? The rumour is so positive and so persistent that it cannot be disregarded or supposed to be merely a foolish jest or a senselessly false statement put forward for the purpose of deceiving the public. We are compelled, therefore, to conclude that there must be behind this fable some real meaning and some definite purpose, and we ask ourselves; What is the purpose of this puzzle? What can be its real meaning and intention? As usual, the Bacon

key at once solves the riddle. The moment we realise that BACON is HAMLET, we perceive that the purpose of the rumour is to reveal to us the fact that the highest point to which the actor, Shakespeare, of Stratford-on-Avon, attained was to play the part of Ghost to Bacon, that is to act as his "PSEUDONYM," or in other words, the object of the story is to reveal to us the fact that

BACON IS SHAKESPEARE.

Chapter XIII.

Conclusion, with further evidences from title pages.

Bacon had published eleven plays anonymously, when it became imperatively necessary for him to find some man who could be purchased to run the risk, which was by no means inconsiderable, of being supposed to be the author of these plays which included "Richard II."; the historical play which so excited the ire of Queen Elizabeth. Bacon, as we have already pointed out, succeeded in discovering a man who had little, if any, repute as an actor, but who bore a name which was called Shaxpur or Shackspere, which could be twisted into something that might be supposed to be the original of Bacon's pen name of Shake-Speare.

When in 1597 through the medium of powerful friends, by means of the bribe of a large sum of money, the gift of New Place, and the promise of a coat of arms, this man had been secured, he was at once sent away from London to the then remote village of Stratford-on-Avon, where scarcely a score of people could read, and none were likely to connect the name of their countryman, who they knew could neither read nor write and whom they called Shak or Shackspur, with "William Shakespeare" the author of plays the very names of which were absolutely unknown to any of them.

Bacon, when Shackspur had been finally secured in 1597, brought out in the following year 1598 "Loues Labor's lost" with the imprint "newly corrected and augmented by W. Shakespere," and immediately he also brought out under the

name of Francis Meres "Wits Treasury," containing the statement that eleven other plays, including "Richard II.," were also by this same Shakespeare who had written the poems of "Venus and Adonis" and "Lucrece."

Francis Meres says: "As the soule of Euphorbus was thought to live in Pythagoras so the sweete wittie soule of Ovid lives in mellifluous and honytongued Shakespeare, witnes his 'Venus and Adonis,' his 'Lucrece,' his sugred Sonnets among his private friends."

The Sonnets were not printed, so far as is known, before 1609, and they as has been shown in Chapter 8 repeat the story of Bacon's authorship of the plays.

Bacon in 1598, as we have stated in previous pages, fully intended that at some future period posterity should do him justice.

Among his last recorded words are those in which he commends his name and fame to posterity, "after many years had past." Accordingly we find, as we should expect to find, that when he put Shakespeare's name to "Loues Labor's lost" (the first play to bear that name) Bacon took especial pains to secure that at some future date he should be recognised as the real author. Does he not clearly reveal this to us by the wonderful words with which the play of "Loues Labor's lost" opens?

"Let Fame, that all hunt after in their lyues,
Liue registred vpon our brazen Tombes,
And then grace vs, in the disgrace of death:
When spight of cormorant deuouring Time,
Thendeuour of this present breath may buy:
That honour which shall bate his sythes keene edge,
And make us heires of all eternitie."

Bacon intended that "Spight of cormorant devouring Time" … honour…. should make [him] heir of all eternitie.

Compare the whole of this grand opening passage of "Loues Labor's lost" with the lines ascribed to Milton in the 1632 edition of Shakespeare's plays

when Bacon was [supposed to be] dead. No epitaph appeared in the 1623 edition, but in the 1632 edition appeared the following:

"An Epitaph on the admirable Dramaticke Poet,
W. Shakespeare.

What neede my Shakespeare for his honour'd bones,
The labour of an Age in piled stones
Or that his hallow'd Reliques should be hid
Under a starrey-pointed Pyramid?
Deare sonne of Memory, great Heire of Fame,
What needst thou such dull witnesse of thy Name?
Thou in our wonder and astonishment
Hast built thy selfe a lasting Monument:
For whil'st, to th' shame of slow-endevouring Art
Thy easie numbers flow, and that each part,
Hath from the leaves of thy unvalued Booke,
Those Delphicke Lines with deepe impression tooke
Then thou our fancy of her selfe bereaving,
Dost make us Marble with too much conceiving,
And so Sepulcher'd, in such pompe dost lie
That Kings for such a Tombe would wish to die."

We have pointed out in Chapter 10 and in Chapter 11 how clearly in "Loues Labour's lost," on page 136 of the folio of 1623, Bacon reveals the fact that he is the Author of the Plays, and we have shewn how the title pages of certain books support this revelation, beginning with the title page of the first folio of 1623 with its striking revelation given to us in the supposititious portrait which really consists of "a mask supported on two left arms."

We may, however, perhaps here mention that instructions are specially given to all who can understand, in the little book which is said to be a continuation of

Bacon's "Nova Atlantis," and to be by R. H., Esquire, [whom no one has hitherto succeeded in identifying].

On Plate 34, Page 149, we give a facsimile of its Title Page which describes the book and states that it was printed in 1660.

In this book a number of very extraordinary inventions are mentioned such as submarine boats to blow up ships and harbours, and telegraphy by means of magnetic needles, but the portion to which we now wish to allude is that which refers to a "solid kind of Heraldry." This will be found on pp. 23-4, and reads as follows:

"We have a solid kind of Heraldry, not made specious with ostentative pydecoats and titular Atcheivements, which in Europe puzzel the tongue as well as memory to blazon, and any Fool may buy and wear for his money. Here in each province is a Register to record the memorable Acts, extraordinary qualities and worthy endowments of mind of the most eminent Patricians. Where for the Escutcheon of Pretence each noble person bears the Hieroglyphic of that vertue he is famous for. E.G. If eminent for Courage, the Lion; If for Innocence, the White Lamb; If for Chastity, a Turtle; If for Charity, the Sun in his full glory; If for Temperance, a slender Virgin, girt, having a bridle in her mouth; If for Justice, she holds a Sword in the right, and a Scales in the left hand; If for Prudence, she holds a Lamp; If for meek Simplicity, a Dove in her right hand; If for a discerning Judgment, an Eagle; If for Humility, she is in Sable, the head inclining and the knees bowing; If for Innocence, she holds a Lilie; If for Glory or Victory, a Garland of Baies; If for Wisdom, she holds a Salt; If he excels in Physic, an Urinal; If in Music, a Lute; If in Poetry, a Scrowle; If in Geometry, an Astrolabe; If in Arithmetic, a Table of Cyphers; If in Grammar, an Alphabetical Table; If in Mathematics, a Book; If in Dialectica she holds a Serpent in either hand; and so of the rest; the Pretence being ever paralel to his particular Excellency. And this is sent him cut in brass, and in colours, as he best phansies for the Field; only the Hieroglyphic is alwayes proper."

These references to a solid kind of Heraldry refer to the title pages and frontispieces of books which may be characterised broadly as Baconian books, and examples of every one of them can be found in books extending from the Elizabethan period almost up to the present date.

We place Plate 35, Page 153, before the reader, which is a photo enlargement of the title page of Bacon's "History of Henry VII.," printed in Holland, 1642, the first Latin edition (in 12mo).

Here is seen the Virgin holding the Salt, shewing the Wisdom of the Author. In her right hand, which holds the Salt, she holds also two other objects which seem difficult to describe. They represent "a bridle without a bit," in order to tell us the purpose of the Plate is to unmuzzle Bacon, and to reveal to us his authorship of the plays known as Shakespeare's.

But in order to prove that the objects represent a bridle without a bit, we must refer to two emblem books of very different dates and authorship.

First we refer our readers to Plate 36, Page 156, which is a photo enlargement of the figure of Nemesis in the first (February 1531) edition of Alciati's Emblems. The picture shews us a hideous figure holding in her left hand a bridle with a tremendous bit to destroy false reputations, *improba verba*.

We next put before our readers the photo reproduction of the figure of Nemesis, which will be found on page 484, of Baudoin's Emblems, 1638. Baudoin had previously brought out in French a translation of Bacon's "Essays," which was published at Paris in 1621. In the preface to his book of Emblems he tells us that he was induced to undertake the task by BACON (printed in capital letters), and by Alciat (printed in ordinary type). In this book of Emblems, Baudoin, on page 484, placed his figure of Nemesis opposite to Bacon's name. If the reader carefully examines Plate 37 he will perceive that it is no longer a grinning hideous figure, but is a figure of FAME, and carries a bridle in which there is found to be no sign of any kind of bit, because the purpose of the Emblem is to shew that Nemesis will unmuzzle and glorify Bacon.

In order to make the meaning of Baudoin's Emblem still more emphatically explicit a special Rosicrucian Edition of the same date, 1638, was printed, in

which Baudoin's Nemesis is printed "upside down"; we do not mean bound upside down, but printed upside down, for there is the printing of the previous page at the back of the engraving. We have already alluded on page 113 to the frequent practice of the upside down printing of ornaments and engravings when a revelation concerning Bacon's connection with Shakespeare is afforded to us.

The writer possesses an ordinary copy of Baudoin's Emblems, 1638, and also a copy of the edition with the Nemesis printed upside down which appears opposite Bacon's name. The copy so specially printed is bound with Rosicrucian emblems outside.

The reader, by comparing Baudoin's Nemesis, Plate 37, and the Title Page of Henry VII., Plate 35, will at once perceive that the objects in the right hand of the Virgin holding the salt box are correctly described as representing a "bridle without a bit," and he will know that a revelation concerning Bacon and Shakespeare is going to be given to him. Now we will tell him the whole story. On the right of the picture, Plate 35 (the reader's left) we see a knight in full armour, and also a philosopher who is, as the roses on his shoes tell us, a Rosicrucian philosopher. On the left on a lower level is the same philosopher, evidently Bacon, but without the roses on his shoes. He is holding the shaft of a spear with which he seems to stop the wheel. By his side stands what appears to be a Knight or Esquire, but the man's sword is girt on the wrong side, he wears a lace collar and lace trimming to his breeches, and he wears actor's boots (see Plate 28, Page 118, and Plate 132, Page 127).

We are therefore forced to conclude that he is an Actor. And, lo, he wears but ONE SPUR. He is therefore a Shake-spur Actor (on Plate 27, Page 115, is shewn a Shake-spur on horseback). This same Actor is also shaking the spear which is held by the philosopher. He is therefore also a Shakespear Actor. And now we can read the symbols on the wheel which is over his head: the "mirror up to nature," "the rod for the back of fools," the "basin to hold your guilty blood" ("Titus Andronicus," v. 2), and "the fool's bawble." On the other side of the spear: the spade the symbol of the workman, the cap the symbol of the

gentleman, the crown the symbol of the peer, the royal crown, and lastly the Imperial crown. Bacon says Henry VII. wore an Imperial crown. Quite easily now we can read the whole story.

The "History of Henry VII.," though in this picture displayed on a stage curtain, is set forth by Bacon in prose while the rest of the Histories of England are given to the world by Bacon by means of his pseudonym the Shakespear Actor at the Globe to which that figure is pointing.

Plain as the plate appears to the instructed eye it seems hitherto to have failed to reveal to the *un*instructed its clear meaning that

BACON IS SHAKESPEARE.

CHAPTER XIV.

Postscriptum.

Most fortunately before going to press we were able to see at the Record Office, Chancery Lane, London, the revealing documents recently discovered by Dr. Wallace and described by him in an article published in the March number of *Harper's Monthly Magazine*, under the title of "New Shakespeare Discoveries." The documents found by Dr. Wallace are extremely valuable and important. They tell us a few real facts about the Householder of Stratford-upon-Avon, and they effectually once and for all dispose of the idea that the Stratford man was the Poet and Dramatist, — the greatest genius of all the ages.

In the first place they prove beyond the possibility of cavil or question that "Shakespeare, of Stratford-upon-Avon, Gentleman," was totally unable to write even so much as any portion of his own name. It is true that the Answers to the Interrogatories which are given by "William Shakespeare, of Stratford-upon-Avon, Gentleman," are marked at the bottom "Wilm Shaxpr," but this is written by the lawyer or law clerk, in fact "dashed in" by the ready pen of an extremely rapid writer. A full size photographic facsimile of this "so-called" signature, with a portion of the document above it, is given in Plate 38, Page 164, and on the opposite page, in Plate 39, is shewn also in full size facsimile the real signature of Daniell Nicholas with a portion of the document, which he signed, above it.

In order that the reader may be able more easily to read the law writing we give on page 167, in modern type, the portion of the document photographed above the name Wilm Shaxp'r, and on the same page a modern type transcript of the document above the signature of Daniell Nicholas.

Any expert in handwriting will at once perceive that "Wilm Shaxp'r" is written by the same hand that wrote the lower portion of Shakespeare's Answers to Interrogatories, and by the same hand that wrote the other set of Answers to Interrogatories which are signed very neatly by "Daniell Nicholas."

The words “Daughter Marye” occur in the portion photographed of both documents, and are evidently written by the same law writer, and can be seen in Plate 38, Page 164, just above the “Wilm Shaxp’r,” and in Plate 39, Page 165, upon the fifth line from the top. The name of “Shakespeare” also occurs several times in the “Answers to Interrogatories.” One instance occurs in Plate 39, Page 165, eight lines above the name of Daniell Nicholas, and if the reader compares it with the “Wilm Shaxp’r” on Plate 38, Page 164, it will be at once seen that both writings are by the same hand.

portion What c’tayne he . . . . . plt twoe hundered pounds decease. But sayth that his house. And they had amo about their marriadge w’ch nized. And more he can ponnt saythe he can saye of the same Interro for cessaries of houshould stuffe his daughter Marye WILM SHAXPR

TYPE FACSIMILE OF PLATE XXXVIII.

*

Interr this depnnt sayth that the deft did beare ted him well when he by him the said Shakespeare his daughter Marye that purpose sent him swade the plt to the solempnised uppon pmise of nnt. And more he can this deponnt sayth is deponnt to goe wth DANIELL NICHOLAS.

TYPE FACSIMILE OF PLATE XXXIX.

Answers to Interrogatories are required to be signed by the deponents. In the case of “Johane Johnsone,” who could not write her name, the depositions are signed with a very neat cross which was her mark. In the case of “William Shakespeare, of Stratford-upon-Avon, Gentleman,” who was also unable to write his name, they are signed with a dot which might quite easily be mistaken for an accidental blot. Our readers will see this mark, which is not a blot but a purposely made mark, just under “Wilm Shaxp’r.”

Dr. Wallace reads the “so-called” signature as Willm Shaks, but the Christian name is written quite clearly Wilm. And we should have supposed that any one possessing even the smallest acquaintance with the law writing of the period must have known that the scroll which looks like a flourish at the end of the surname is not and cannot be an “s,” but is most certainly without any possibility of question a “p,” and that the dash through the “p” is the usual and accepted abbreviation for words ending in “per,” or “peare,” *etc.*[12]

Then how ought we, nay how arewe, compelled to read the so-called signature? The capital S is quite clear, so also is the “h,” then the next mass of strokes all go to make up simply the letter “a.” Then we come to the blotted letter,

this is not and cannot be “kes” or “ks” because in the law writing of the period every letter “s” (excepting “s” at the end of a word) was written as a very long letter. This may readily be seen in the word Shakespeare which occurs in Plate 39 on the eighth line above the signature of Daniell Nicholas. What then is this blotted letter if it is not kes or ks? The answer is quite plain, it is an “X,” and a careful examination under a very strong magnifying glass will satisfy the student that it is without possibility of question correctly described as an “X.”[13] Yes, the lawclerk marked the Stratford Gentleman’s “Answers to Interrogatories” with the name “Wilm Shaxp’r.” Does there exist a Stratfordian who will contend that William Shakespeare, of Stratford-upon-Avon, Gentleman, if he had been able to write any portion of his name would have marked his depositions Wilm Shaxp’r? Does there exist any man who will venture to contend that the great Dramatist, the author of the Immortal plays, would or could have so signed his name? We trow not; indeed, such an abbreviation would be impossible in a legal document in a Court of Law where depositions are required to be signed in full.

With reference to the other so-called Shakespeare's signatures we must refer the reader to our Chapter III. which was penned before these "New Shakespeare Discoveries" were announced. And it is perhaps desirable to say that the dot in the "W" which appears in two of those "so-called" signatures of Shakespeare, and also in the one just discovered, is part of the regular method of writing a "W" in the law writing of the period. In the Purchase Deed of the property in Blackfriars, of March 10th 1612-13, mentioned on page 38, there are in the first six lines of the Deed seven "W's," in each of which appears a dot. And in the Mortgage Deed of March 11th 1612-13, there are seven "W's" in the first five lines, in each of which appears a similar dot. The above-mentioned two Deeds are in the handwriting of different law clerks.

It may not be out of place here again to call our readers' attention to the fact that law documents are required to be signed "in full," and that if the very rapid and ready writer who wrote "Wilm Shaxp'r" were indeed the Gentleman of Stratford it would have been quite easy for such a good penman to have written his name in full; this the law writer has not done because he did not desire to forge a signature to the document, but desired only to indicate by an abbreviation that the dot or spot below was the mark of William Shakespeare of Stratford-upon-Avon.

Thus the question, whether William Shakespeare, of Stratford-upon-Avon, Gentleman, could or could not write his name is for ever settled in the negative, and there is no doubt, there can be no doubt, upon this matter.

Dr. Wallace declares "I have had no theory to defend and no hypothesis to propose." But as a matter of fact his whole article falsely assumes that "William Shakespeare, of Stratford-upon-Avon, Gentleman," who is referred to in the documents, is no other than the great Dramatist who wrote the Immortal plays. And the writer can only express his unbounded wonder and astonishment that even so ardent a Stratfordian as Dr. Wallace, after studying the various documents which he discovered, should have ventured to say:

"Shakespeare was the third witness examined. Although, forsooth, the matter of his statements is of no high literary quality and the manner is lacking in

imagination and style, as the Rev. Joseph Green in 1747 complained of the will, we feel none the less as we hear him talk that we have for the first time met Shakespeare in the flesh and that the acquaintance is good."

As a matter of fact none of the words of any of the deponents are their own words, but they are the words of the lawyers who drew the Answers to the Interrogatories. The present writer, when a pupil in the chambers of a distinguished lawyer who afterwards became a Lord Justice, saw any number of Interrogatories and Answers to Interrogatories, and even assisted in their preparation. The last thing that any one of the pupils thought of, was in what manner the client would desire to express his own views. They drew the most plausible Answers they could imagine, taking care that their words were sufficiently near to the actual facts for the client to be able to swear to them.

The so-called signature "Wilm Shaxp'r," is written by the lawyer or law clerk who wrote the lower part of Shakespeare's depositions, and this same clerk also wrote the depositions above the name of another witness who really *signs* his own name, viz., "Daniell Nicholas." The only mark William Shakespeare put to the document was the blot above which the abbreviated name "Wilm Shaxp'r" was written by the lawyer or law clerk.

The documents shew that Shakespeare of Stratford occasionally "lay" in the house in Silver Street, and Ben Jonson's words in "The Staple of News" (Third Intermeane; Act iii.), to which Dr. Wallace refers viz., that "Siluer-Streete" was "a good seat for a Vsurer" are very informing, because as we have before pointed out the Stratford man was a cruel usurer.

Dr. Wallace's contention that Mountjoy, the wig-maker, of the corner house in Silver Street where Shakespeare, of Stratford-upon-Avon, Gentleman, occasionally slept, was the original of the name of the Herald in Henry V.[14] really surpasses, in want of knowledge of History, anything that the writer has ever previously encountered, and he is afraid that it really is a measure of the value of Dr. Wallace's other inferences connecting the illiterate Stratford Rustic with the great Dramatist who "took all knowledge for his province."

Dr. Wallace's "New Shakespeare Discoveries" are really extremely valuable and informing, and very greatly assist the statements which the writer has made in the previous chapters, viz., that the Stratford Householder was a mean Rustic who was totally unable to read or to write, and was not even an actor of repute, but was a mere hanger-on at the Theatre. Indeed, the more these important documents are examined the clearer it will be perceived that, as Dr. Wallace points out, they shew us that the real William Shakespeare, of Stratford-upon-Avon, gentleman, was not the "Aristocrat," whom Tolstoi declares the author of the plays to have been, but was in fact a man who resided [occasionally when he happened to revisit London] "in a hardworking family," a man who was familiar with hairdressers and their apprentices, a man who mixed as an equal among tradesmen in a humble position of life, who referred to him as "One Shakespeare." These documents prove that "One Shakespeare" was not and could not have been the "poet and dramatist." In a word these documents strongly confirm the fact that

BACON IS SHAKESPEARE.

CHAPTER XV.

Appendix.

The facsimile shewn in Plate 41, Page 176, is from “The Attourney’s Academy,” 1630. The reader will perceive that the ornamental heading is printed upside down. In the ordinary copies it is not so printed, but only in special copies such as that possessed by the writer; the object of the upside-down printing being, as we have already pointed out in previous pages, to reveal, to those deemed worthy of receiving it, some secret concerning Bacon.

In the present work, while we have used our utmost endeavour to place in the vacant frame, the true portrait of him who was the wonder and mystery of his own age and indeed of all ages, we have never failed to remember the instructions given to us in “King Lear”: —

> “Have more than thou showest,
> Speak less than thou knowest.”

Our object has been to supply exact and positive information and to confirm it by proofs so accurate and so certain as to compel belief and render any effective criticism an impossibility.

It may however not be without advantage to those who are becoming convinced against their will, if we place before them a few of the utterances of men of the greatest distinction who, without being furnished with the information which we have been able to afford to our readers, were possessed of sufficient intelligence and common sense to perceive the truth respecting the real authorship of the Plays.

LORD PALMERSTON, b. 1784, d. 1865.

Viscount Palmerston, the great British statesman, used to say that he rejoiced to have lived to see three things — the re-integration of Italy, the unveiling of the mystery of China and Japan, and the explosion of the Shakespearian illusions. — *From the Diary of the Right Hon. Mount-Stewart E. Grant.*

LORD HOUGHTON, b. 1809, d. 1885.

Lord Houghton (better known as a statesman under the name of Richard Monckton Milnes) reported the words of Lord Palmerston, and he also told Dr. Appleton Morgan that he himself no longer considered Shakespeare, the actor, as the author of the Plays.

SAMUEL TAYLOR COLERIDGE, b. 1772, d. 1834.

Samuel Taylor Coleridge, the eminent British critic and poet, although he assumed that Shakespeare was the author of the Plays, rejected the facts of his life and character, and says: "Ask your own hearts, ask your own common sense, to conceive the possibility of the author of the Plays being the anomalous, the wild, the irregular genius of our daily criticism. What! are we to have miracles in sport? Does God choose idiots by whom to convey divine truths to man?"

JOHN BRIGHT, b. 1811, d. 1889.

John Bright, the eminent British statesman, declared: "Any man that believes that William Shakespeare of Stratford wrote Hamlet or Lear is a fool." In its issue of March 27th 1889, the *Rochdale Observer* reported John Bright as scornfully angry with deluded people who believe that Shakespeare wrote Othello.

RALPH WALDO EMERSON, b. 1803, d. 1882.

Ralph Waldo Emerson, the great American philosopher and poet, says: "As long as the question is of talent and mental power, the world of men has not his equal to show…. The Egyptian verdict of the Shakespeare Societies comes to mind that he was a jovial actor and manager. I cannot marry this fact to his verse." — *Emerson's Works. London, 1883. Vol. 4, p. 420.*

JOHN GREENLEAF WHITTIER, b. 1807, d. 1892.

John Greenleaf Whittier, the American poet, declared: "Whether Bacon wrote the wonderful plays or not, I am quite sure the man Shakspere neither did nor could."

DR. W. H. FURNESS, b. 1802, d. 1891.

Dr. W. H. Furness, the eminent American scholar, who was the father of the Editor of the Variorum Edition of Shakespeare's Works, wrote to Nathaniel Holmes in a letter dated Oct. 29th 1866: "I am one of the many who have never been able to bring the life of William Shakespeare and the plays of Shakespeare within planetary space of each other. Are there any two things in the world more incongruous? Had the plays come down to us anonymously, had the labor of discovering the author been imposed upon after generations, I think we could have found no one of that day but F. Bacon to whom to assign the crown. In this case it would have been resting now on his head by almost common consent."

MARK TWAIN, b. 1835, d. 1910.

Samuel Langhorne Clemens, who wrote under the pseudonym of Mark Twain, was, — it is universally admitted, — one of the wisest of men. Last year (1909) he published a little book with the title, "Is Shakespeare dead?" In this he treats with scathing scorn those who can persuade themselves that the immortal plays were written by the Stratford clown. He writes, pp. 142-3: "You can trace the life histories of the whole of them [the world's celebrities] save one far and away the most colossal prodigy of the entire accumulation — Shakespeare. About him you can find out *nothing*. Nothing of even the slightest importance. Nothing worth the trouble of stowing away in your memory. Nothing that even remotely indicates that he was ever anything more than a distinctly commonplace person — a manager,[15] an actor of inferior grade, a small trader in a small village that did not regard him as a person of any consequence, and had forgotten him before he was fairly cold in his grave. We can go to the records and find out the life-history of every renowned *race-horse* of modern times — but not Shakespeare's! There are many reasons why, and they have been furnished in cartloads (of guess and conjecture) by those troglodytes; but there is one that is worth all the rest of the reasons put together, and is abundantly sufficient all by itself — *he hadn't any history to record*. There is no way of getting around that deadly fact. And no sane way has yet been discovered of getting round its formidable significance. Its quite plain significance — to any but those thugs (I do not use the term unkindly) is, that Shakespeare had no

prominence while he lived, and none until he had been dead two or three generations. The Plays enjoyed high fame from the beginning."

PRINCE BISMARCK, b. 1815, d. 1898.

We are told in Sydney Whitman's "Personal Reminiscences of Prince Bismarck," pp. 135-6, that in 1892, Prince Bismarck said, "He could not understand how it were possible that a man, however gifted with the intuitions of genius, could have written what was attributed to Shakespeare unless he had been in touch with the great affairs of state, behind the scenes of political life, and also intimate with all the social courtesies and refinements of thought which in Shakspeare's time were only to be met with in the highest circles."

"It also seemed to Prince Bismarck incredible that the man who had written the greatest dramas in the world's literature could of his own free will, whilst still in the prime of life, have retired to such a place as Stratford-on-Avon and lived there for years, cut off from intellectual society, and out of touch with the world."

The foregoing list of men of the very greatest ability and intelligence who were able clearly to perceive the absurdity of continuing to accept the commonly received belief that the Mighty Author of the immortal Plays was none other than the mean rustic of Stratford, might be extended indefinitely, but the names that we have mentioned are amply sufficient to prove to the reader that he will be in excellent company when he himself realises the truth that

BACON IS SHAKESPEARE.

A NEUER WRITER, TO AN EUER READER. NEWES.

Eternall reader, you haue heere a new play, neuer stal'd with the Stage, neuer clapper-clawd with the palmes of the vulger, and yet passing full of the palme comicall; for it is a birth of your braine, that neuer under-tooke any thing commicall, vainely: And were but the vaine names of commedies changde for the titles of Commodities, or of Playes for Pleas; you should see all those grand

censors, that now stile them such vanities, flock to them for the maine grace of their grauities: especially this authors Commedies, that are so fram'd to the life, that they serve for the most common Commentaries, of all the actions of our Hues shewing such a dexteritie, and power of witte, that the most displeased with Playes are pleasd with his Commedies…..

And beleeue this, that when hee is gone, and his Commedies out of sale, you will scramble for them, and set up a new English Inquisition. Take this for a warning, and at the perrill of your pleasures losse, and Judgements, refuse not, nor like this the lesse, for not being sullied, with the smoaky breath of the multitude.[16]

ADDENDA ET CORRIGENDA.

Footnote to page 45. There was a forest of Arden in Warwickshire.
Footnote to page 51. This Richard Quyney's son Thomas married 10th February 1616, Judith, William Shakespeare's younger daughter, who, like her father, the supposed poet, was totally illiterate, and signed the Register with a mark.

Footnote to page 62. In 1615, although nothing of poetical importance bearing Bacon's name had been published, we find in Stowe's "Annales," p. 811, that Bacon's name appears seventh in the list there given of Elizabethan poets.

ERRATA.

P. 5. For "knew little Latin" read "had small Latin."
P. 29. For "line 511" read "line 512."
P. 81. For "Montegut" read "Montegut."
For "Greek for crowned" read "Greek for crown."

P. 93 & 94. For “Quintillian” read “Quintilian.”

P. 133. For “Greek name” read “Greek word.”

PROMUS OF FOURMES AND ELEGANCYES

BY

FRANCIS BACON.

PREFACE TO PROMUS

To these Essays I have attached a carefully collated reprint of Francis Bacon's "Promus of Formularies and Elegancies," a work which is to be found in Manuscript at the British Museum in the Harleian Collection (No. 7,017.)

The folios at present known are numbered from 83 to 132, and are supposed to have been written about A.D. 1594-6, because folio 85 is dated December 5th 1594, and folio 114, January 27 1595.

The pagination of the MS. is modern, and was inserted for reference purposes when the Promus was bound up in one volume together with certain other miscellaneous manuscripts which are numbered from 1 to 82, and from 133 onwards.

A facsimile of a portion of a leaf of the Promus MS., folio 85, is given on pages 190-91, in order to illustrate Bacon's handwriting, and also to shew his method of marking the entries. It will be perceived that some entries have lines //// drawn across the writing, while upon others marks similar to the capital letters T, F, and A are placed at the end of the lines. But as the Promus is here printed page for page as in the manuscript, I am not raising the question of the signification of these marks, excepting only to say they indicate that Bacon made considerable use of these memoranda.

"Promus" means larder or storehouse, and these "Fourmes, Formularies and Elegancyes" appear to have been intended as a storehouse of words and phrases to be employed in the production of subsequent literary works.

Mrs. Pott was the first to print the "Promus," which, with translations and references, she published in 1883. In her great work, which really may be described as monumental, Mrs. Pott points out, by means of some thousands of quotations, how great a use appears to have been made of the "Promus" notes, both in the acknowledged works of Bacon and in the plays which are known as Shakespeare's.

Mrs. Pott's reading of the manuscript was extremely good, considering the great difficulty experienced in deciphering the writing. But I thought it advisable when preparing a reprint to secure the services of the late Mr. F. B. Bickley, of the British Museum, to carefully revise the whole of Bacon's "Promus." This task he completed and I received twenty-four proofs, which I caused to be bound with a title page in 1898. There were no other copies, the whole of the type having unfortunately been broken up. The proof has again been carefully collated with the original manuscript and corrected by Mr. F. A. Herbert, of the British Museum, and I have now reprinted it here, as I am satisfied that the more Bacon's Promus — the Storehouse — is examined, the more it will be recognised how large a portion of the material collected therein has been made use of in the Immortal Plays, and I therefore now issue the Promus with the present essay as an additional proof of the identity of Bacon and Shakespeare.

EDWIN DURNING-LAWRENCE.

PROMUS OF FORMULARIES.

Folio 83, front.

Ingenuous honesty and yet with opposition and strength.
Corni contra croci good means against badd, homes to crosses.
In circuitu ambulant impij; honest by antiperistasis.
Siluj a bonis et dolor meus renouatus est.
Credidj propter quod locutus sum.
Memoria justi cum laudibus at impiorum nomen putrescet
Justitiamque omnes cupida de mente fugarunt.
Non recipit stultus verba prudential nisi ea dixeris quaee uersantur in corde ejus
Veritatem erne et noli vendere
Qui festinat ditari non erat insons
Nolite dare sanctum canibus.
Qui potest capere capiat
Quoniam Moses ad duritiam cordis uestri permisit uobis
Obedire oportet deo magis quam hominibus.
Et vniuscujusque opus quale sit probabit ignis
Non enim possumus aliquid aduersus ueritatem sed pro ueritate.

Folio 83, front — continued.

For which of y'e good woorkes doe yow stone me
Quorundam hominum peccata praecedunt ad judicium

quorundam sequuntur
Bonum certamen certauj
Sat patriae priamoque datum.
Ilicet obruimur numero.
Atque animis illabere nostris
Hoc praetexit nomine culpam.
Procul o procul este prophani
Magnanimj heroes nati melioribus annis

Folio 83, back.

Ille mihi ante alios fortunatusque laborum
Egregiusque animi qui ne quid tale videret
Procubuit moriens et humum semel ore momordit
Fors et uirtus miscentur in vnum.
Non ego natura nec sum tam callidus vsu.
aeuo rarissima nostro simplicitas
Viderit vtilitas ego cepta fideliter edam.
Prosperum et foelix scelus, virtus vocatur
Tibi res antiquas laudis et artis
Inuidiam placare paras uirtute relicta.
Iliacos intra muros peccatur et extra
Homo sum humanj a me nil alienum puto.
The grace of God is woorth a fayre
Black will take no other hue
Vnum augurium optimum tueri patria.
Exigua res est ipsa justitia
Dat veniam coruis uexat censura columbas.
Homo hominj deus
Semper virgines furiae; Cowrting a furye
Di danarj di senno et di fede

Ce ne manco che tu credj
Chi semina spine non vada discalzo
Mas vale a quien Dios ayuda que a quien mucho madruga.
Quien nesciamente pecca nesciamente ua al infierno
Quien ruyn es en su uilla
Ruyn es en Seuilla
De los leales se hinchen los huespitales

Folio 84, front.

We may doe much yll or we doe much woorse
Vultu laeditur saepe pietas.
Difficilia quae pulchra
Conscientia mille testes.
Summum Jus summa injuria
Nequiequam patrias tentasti lubricus artes.
Et monitj meliora sequamur
Nusquam tuta fides
Discite Justitiam moniti et non temnere diuos
Quisque suos patimur manes.
Extinctus amabitur idem.
Optimus ille animi vindex laedentium pectus
Vincula qui rupit dedoluitque semel.
Virtue like a rych geme best plaine sett
Quibus bonitas a genere penitus insita est ij iam non mali esse nolunt sed nesciunt
Oeconomicae rationes publicas peruertunt.
Divitiae Impedimenta virtutis; The bagage of vertue
Habet et mors aram.

Nemo virtuti invidiam reconciliauerit praeter mort …
Turpe proco ancillam sollicitare Est autem virtutis ancilia laus.
Si suum cuique tribuendum est certe et venia humanitati
Qui dissimulat liber non est
Leue efficit jugum fortunae jugum amicitiae
Omnis medecina Innouatio

Folio 84, front — continued.

Auribus mederi difficillimum.
Suspitio fragilem fidem soluit fortem incendit
Pauca tamen suberunt priscae vestigia fraudis
Dulce et decorum est pro patria mori
Mors et fugacem persequitur virum.
Danda est hellebori multo pars maxima avar [is]

Folio 84, back.

Minerall wytts strong poyson and they be not corrected
aquexar.
Ametallado fayned inameled.
Totum est majus sua parte against factions and priuate profite
Galens compositions not paracelsus separations
Full musike of easy ayres withowt strange concordes and discordes
In medio non sistit uirtus
Totem est quod superest

A stone withowt foyle
A whery man that lookes one way and pulls another
Ostracisme
Mors in Olla poysonings
Fumos uendere.

[Sidenote up the left margin oriented at ninety degrees to the text: FOURMES COMERSATE]

Folio 85, front.

Dec. 5, 1594.

Promus
// Suauissima vita indies meliorem fierj
The grace of God is woorth a faire
Mors in olla F
// No wise speech thowgh easy and voluble.
Notwithstanding his dialogues (of one that giueth life to his speach by way of quaestion). T
He can tell a tale well (of those cowrtly giftes of speach w'ch. are better in describing then in consydering) F
A goode Comediante T (of one that hath good grace in his speach)
To commend Judgments.
// To comend sense of law
// Cunyng in the humors of persons but not in the condicons of actions
Stay a littell that we make an end the sooner. A
// A fooles bolt is soone shott
His lippes hang in his light. A. T

// Best we lay a straw hear
A myll post thwitten to a pudding pricke T
// One swallo maketh no sumer
L'Astrologia e vera ma l'astrologuo non sj truoua
// Hercules pillers non vltra. T
// He had rather haue his will then his wyshe. T
Well to forgett
Make much of yourselfe

Folio 85, front — continued.

Wyshing yow all &c and myself occasion to doe
yow servyce
// I shalbe gladd to vnderstand your newes but none
// rather then some ouerture whearin I may doe
// yow service
// Ceremonyes and green rushes are for strangers T
How doe yow? They haue a better question in cheap side w'lak ye
// Poore and trew. Not poore therefore not trew T

Folio 85, back.

Tuque Inuidiosa vestustas. T
Licentia sumus omnes deteriores. T
Qui dat nivem sicut lanam T
Lilia agri non laborant neque nent T
Mors omnia solvit T
// A quavering tong.
like a cuntry man that curseth the almanach. T
Ecce duo gladij his. T
Arnajore ad minorem. T
In circuitu ambulant impij T

Exijt sermo inter fratres quod discipulus iste non moritur T

Omne majus continet in se mjnus T

Sine vlla controuersia quod minus est majore benedic … T

She is light she may be taken in play T

He may goe by water for he is sure to be well landed T

// Small matters need sollicitacion great are remembred of themselues

The matter goeth so slowly forward that I haue almost forgott it my self so as I maruaile not if my frendes forgett

Not like a crabb though like a snaile

Honest men hardly chaung their name. T

The matter thowgh it be new (if that be new wch) hath been practized in like case thowgh not in this particular

I leaue the reasons to the parties relacions and the consyderacion of them to your wysdome

Folio 86, front.

I shall be content my howrs intended for service leaue me in liberty

// It is in vayne to forbear to renew that greef by

// speach w'ch the want of so great a comfort must

// needes renew.

// As I did not seeke to wynne your thankes so your

// courteous acceptacion deserueth myne

// The vale best discouuereth the hill T.

// Sometymes a stander by seeth more than a plaier T.
The shortest foly is the best. T.
// I desire no secrett newes but the truth of comen
newes. T.
// Yf the bone be not trew[17] sett it will neuer be well
till it be broken. T.
// Cheries and newes fall price soonest. T.
You vse the lawyers fourme of pleading T.
// The difference is not between yow and me but
between your proffite and my trust
// All is not in years some what is in howres well
spent. T.
// Offer him a booke T
// Why hath not God sent yow my mynd or me your
// means.
// I thinke it my dowble good happ both for the
obteynyng and for the mean.
// Shutt the doore for I mean to speak treason T.
I wysh one as fytt as I am vnfitt
I doe not onely dwell farre from neighbors but near
yll neighbors. T

Folio 86, front — continued.

// As please the paynter T.
Receperunt mercedem suam. T.
Secundum tidem vestram fiet vobis
Ministerium meum honorificabo

Folio 86, back.

Beati mortuj qui moriuntur in domino
Detractor portat Diabolum in lingua T
frangimur heu fatis inquit ferimurque procella
Nunc ipsa vocat res
Dij meliora pijs erroremque hostibus illum
Aliquisque malo fuit vsus in illo
Vsque acleo latet vtilitas
Et tamen arbitrium que, rit res ista duorum.
Vt esse phebi dulcius lumen solet
Jam jam cadentis
Velle suum cuique est nee voto viuitur vno
Who so knew what would be dear
Nead be a marchant but a year.
Blacke will take no other hew
He can yll pipe that wantes his vpper lip
Nota res mala optima
Balbus balbum rectius intelligit
L' agua va al mar
A tyme to gett and a tyme to loose
Nee dijs nee viribus equis
Vnum pro multis dabitur caput
Mitte hanc de pectore curam
Neptunus ventis impleuit vela secundis
A brayne cutt with facettes T
T Yow drawe for colors but it prooueth contrarie
T Qui in paruis non distinguit in magnis labitur.
Every thing is subtile till it be conceyued

Folio 87, front.

That y't. is forced is not forcible
More ingenious then naturall
Quod longe jactum est leviter ferit
Doe yow know it? Hoc solum scio quod nihil scio
I know it? so say many
Now yow say somewhat.s. euen when yow will; now
yow begynne to conceyue I begynne to say.
What doe yow conclude vpon that? etiam tentas
All is one.s. Contrariorum eadam est ratio.
Repeat your reason.s. Bis ac ter pulchra.
Hear me owt.s. you were neuer in.
Yow iudg before yow vnderstand.s. I iudg as I vnderstand.
You goe from the matter.s. But it was to folow yow.
Come to the poynt.s. why I shall not find yow thear
Yow doe not vnderstand y'e poynt.s. for if I did.
Let me make an end of my tale.s. That which I
will say will make an end of it
Yow take more then is graunted.s.
you graunt lesse then is prooued
Yow speak colorably.s. yow may not say truly.
That is not so by your fauour.s. But by my reason
it is so

Folio 87, back.

It is so I will warrant yow.s. yow may warrant me
but I thinke I shall not vowche yow
Awnswere directly.s. yow mean as you may direct
me
Awnswere me shortly.s. yea that yow may coment
vpon it.

The cases will come together.s. It wilbe to fight
then.
Audistis quia dictum est antiquis
Secundum hominem dico
Et quin[18] non novit talia?
Hoc praetexit nomine culpa
Et fuit in toto notissima fabula celo
Quod quidam facit
Nee nihil neque omnia sunt quae dicit
Facete nunc demum nata ista est oratio
Qui mal intend pis respond
Tum decujt cum sceptra dabas
En haec promissa fides est?
Proteges eos in tabernaculo tuo a contradictione
linuarum.
[Greek: prin to thronein katathronein epistasai]
Sicut audiuimus sic vidimus
Credidj propter quod locutus sum.
Quj erudit derisorem sibj injuriam facit
Super mjrarj ceperunt philosopharj

Folio 88, front.

Prudens celat scientiam stultus proclamat stultitiam
Querit derisor sapientiam nee invenit eam.
Non recipit stultus verba prudentie nisi ea dixeris
quae sunt in corde ejus
Lucerna Dej spiraculum hominis
Veritatem eme et noli vendere
Melior claudus in via quam cursor extra viam.
The glory of God is to conceale a thing and the

glory of man is to fynd owt a thing.
Melior est finis orationis quam principium.
Injtium verborum ejus stultitia et novissimum oris illius pura insania
Verba sapientium sicut aculej et vebut clavj in altum defixj.
Quj potest capere capiat
Vos adoratis quod nescitis
Vos nihil scitis
Quod est veritas.
Quod scripsj scripsj
Nolj dicere rex Judeorum sed dicens se regem Judeorum
Virj fratres liceat audacter dicere apud vos
Quod uult seminator his verborum dicere

Folio 88, back.

Multe te litere ad Insaniam redigunt.
Sapientiam loquiraur inter perfectos
Et Justificata est sapientia a filijs suis.
Scientia inflat charitas edificat
Eadem vobis scribere mihi non pigrum vobis autem necessarium
Hoc autem dico vt nemo vos decipiat in sublimi-tate sermonum.
Omnia probate quod bonum este tenete
Fidelis sermo
Semper discentes et nunquam ad scientiam veritatis pervenientes
Proprius ipsorum propheta

Testimonium hoc verum est
Tantam nubem testium.
Sit omnis homo velox ad audiendum tardus ad loquendum.
Error novissimus pejor priore.
Quecunque ignorant blasphemant
Non credimus quia non legimus
Facile est vt quis Augustinum vincat viderit vtrum veritate an clamore.
Bellum omnium pater
De nouueau tout est beau
De saison tout est bon
Dj danarj di senno et di fede
Ce ne manca che tu credj
Di mentira y saqueras verdad

Folio 89, front.

Magna Civitas magna solitude
light gaines make heuy purses
He may be in my paternoster indeed
But sure he shall neuer be in my Creed
Tanti causas sciat ilia furosis
What will yow?
For the rest
It is possible
Not the lesse for that
Allwaies provyded
Yf yow stay thear
for a tyme
will yow see

what shalbe the end.
Incident
Yow take it right
All this while
Whear stay we? prima facie.
That agayne. more or less.
I find that straunge It is bycause
Not vnlike quasi vero
Yf that be so Best of all
What els
Nothing lesse
Yt cometh to that
Hear yow faile
To meet with that
Bear with that
And how now

Folio 89, front — continued.

Of grace
as if
let it not displease yow
Yow putt me in mynd
I object, I demaund I distinguish *etc.*
A matter not in question
few woordes need
much may be said,
yow haue
well offred.
The mean the tyme
All will not serue

Yow haue forgott nothing.
Causa patet
Tamen quaere.
Well remembred
I arreste yow thear
I cannot thinke that
Discourse better
I was thinking of that
I come to that
That is iust nothing
Peraduenture Interrogatory.
Se then how (for much lesse)

NOTE. — This folio is written in three columns. The first two are printed on page 209, and this page forms the third column. The first line, "Of grace," is written opposite the sixth line on page 209, "What will yow?"

Folio 89, back.

Non est apud aram Consultandem.
Eumenes litter
Sorti pater equus vtrique
Est quoddam [*sic*] prodire tenus si non datur vltra.
Quem si non tenuit magnis tamen excidit ausis
Conamur tenues grandia
Tentantem majora fere praesentibus equum.
Da facilem cursum atque audacibus annue ceptis
Neptunus ventis implevit vela secundis
Crescent illae crescetis Amores
Et quae nunc ratio est impetus ante fuit
Aspice venturo laetentur vt omnia seclo

In Academijs discunt credere
Vos adoratis quod nescitis
To gyue Awthors thear due as yow gyue Tyme his dew w'ch is to discouuer troth.
Vos graeci semper pueri
Non canimus surdis respondent omnia syluae
populus volt decipi
Scientiam loquimur inter perfectos
Et Justificata est sapientia a filijs suis
Pretiosa in oculis domini mors sanctorum ejus
Felix qui potuit rerum cognoscere causas.
Magistratus virum iudicat.
Da sapienti occasionem et addetur ej sapienta
Vite me redde priorj
I had rather know then be knowne

Folio 90, front.

Orpheus in syluis inter Delphinas Arion
Inopem me copia fecit.
An instrument in tunyng
A yowth sett will neuer be higher.
like as children doe w'th their babies when they haue plaied enowgh wth them they take sport to undoe them.
Faber quisque fortune suae
Hinc errores multiplices quod de partibus vitae singuli deliberant de summa nemo.
Vtilitas magnos hominesque deosque efficit auxilijs quoque fauente suis.
Qui in agone contendit a multis abstinet

Quidque cupit sperat suaque illum oracula fallunt
Serpens nisi serpentem comederit non fit Draco
The Athenians holyday.
Optimi consiliarij mortuj
Cum tot populis stipatus eat
In tot populis vix vna fides
Odere Reges dicta quae dici iubent
Nolite confidere in principibus
Et multis vtile bellum.
Pulchrorum Autumnus pulcher
Vsque adeone times quern tu facis ipse timendum.
Dux femina facti
Res est ingeniosa dare
A long wynter maketh a full ear.
Declinat cursus aurumque uolubile tollit
Romaniscult.
Vnum augurium optimum tueri patriam
Bene omnia fecit

Folio 90, back.

Et quo quenque modo fugiatque feratque laborem edocet.
Non vlla laborum o virgo nova mi facies inopinave surgit;
Omnia praecepi atque animo mecum ante peregi.
Cultus major censu
Tale of y'e frogg that swelled.
Viderit vtilitas
Qui eget verseter in turba
While the legg warmeth the boote harmeth
Augustus rapide ad locum leniter in loco
My father was chudd for not being a baron.

Prowd when I may doe any man good.
I contemn few men but most thinges.
A vn matto vno & mezo
Tantene animis celestibus ire
Tela honoris tenerior
Alter rixatur de lana sepe caprina
Propugnat nugis armatus scilicet vt non
Sit mihi prima fides.
Nam cur ego amicum offendam in nugis
A skulter
We haue not drunke all of one water.
Ilicet obruimur numer[o].
Numbring not weighing
let them haue long mornynges that haue not good
afternoones
Cowrt howres
Constancy to remayne in the same state

Folio 90, back — continued.

The art of forgetting.
Rather men then maskers.
Variam dans otium mentem
Spire lynes.

Folio 91, front.

Veruntamen vane conturbatur omnis homo
Be the day never so long at last it ringeth to
even-song.
Vita salillum.
Non possumus aliquid contra veritatem sed pro veritate.

Sapie[n]tia quoque perseueravit mecum
Magnorum fluuiorum navigabiles fontes.
Dos est vxoria lites
Haud numine nostro
Atque animis illabere nostris
Animos nil magne laudi egentes
Magnanimj heroes nati mehioribus annis
AEuo rarissima nostro Simplicitas
Qui silet est firmus
Si nunquam fallit imago
And I would haue thowght
Sed fugit interea fugit irreparabile temp[us]
Totum est quod superest
In a good beleef
Possunt quia posse videntur
Justitiamque omnes cupida de mente fugaru[nt]
Lucrificulus
Qui bene nugatur ad mensam sepe vocatur
faciunt et tedi[urn finitum?][19]
Malum bene conditum ne moveas
Be it better be it woorse
Goe yow after him that beareth the purse
Tranquillo quilibet gubernator
Nullus emptor difficilis bonum emit opsonium
Chi semina spine non vada discalzo

Folio 91, back.

Quoniam Moses ad duritiem cordis permi [sit] vobis
Non nossem peccatum nisi per legem.
Discite Justitiam monit;

Vbj testamentum ibi necesse est mors intercedat
testatoris
Scimus quia lex bona est si quis ea vtatur legitime
Ve vobis Jurisperitj
Nee me verbosas leges ediscere nee me Ingrato
voces prostituisse foro.
fixit leges pretio atque refixit
Nec ferrea Jura Insanumque forum et populi
tabularia vidit
Miscueruntque novercae non innoxia verba
Jurisconsultj domus oraculum Civitatis
now as ambiguows as oracles.
Hic clamosi rabiosa forj
Jurgia vendens improbus
Iras et verba locat
In veste varietas sit scissura non sit
Plenitude potestatis est plenitudo tempestatis
Iliacos intra muros peccatur et extra
Prosperum et felix scelus virtus vocatur
Da mihi fallere da iustum sanctumque viderj.
Nil nisi turpe iuuat cure est sua cuique voluptas
Hec quoque ab alterius grata dolore venit
Casus ne deusne
fabuleque manes

Folio 92, front.

Ille Bioneis sermonibus et sale nigro
Existimamus diuitem omnia scire recte
Querunt cum qua gente cadant
Totus mu[n]dus in malingo positus

O major tandem parcas insane minori
Reall
forma dat esse
Nee fandj fictor Vlisses
Non tu plus cernis sed plus temerarius audes
Nec tibj plus cordis sed minus oris inest.
Invidiam placare paras virtute relicta
[Greek: ho polla klepsas oliga douk ekpheuxetai]
Botrus oppositus Botro citius maturescit.
Old treacle new losanges.
Soft fire makes sweet malt.
Good to be mery and wise.
Seeldome cometh the better.
He must needes swymme that is held vp by the chynne.
He that will sell lawne before he can fold it.
Shall repent him before he haue sold it.
No man loueth his fetters thowgh they be of gold.
The nearer the church the furder from God.
All is not gold that glisters.
Beggers should be no chuzers.
A beck is as good as a dieu vous gard.
The rowling stone neuer gathereth mosse.
Better children weep then old men.

Folio 92, back.

When bale is heckst boote is next.
Ill plaieng w'th short dag (taunting replie).
He that neuer clymb neuer fell.
The loth stake standeth long.
Itch and ease can no man please.

To much of one thing is good for nothing.
Ever spare and euer bare.
A catt may looke on a Kyng.
He had need be a wyly mowse should breed in the cattes ear.
Many a man speaketh of Rob. hood that neuer shott in his bowe.
Batchelers wyues and maides children are well taught.
God sendeth fortune to fooles.
Better are meales many then one to mery.
Many kisse the child for the nurses sake.
When the head akes all the body is the woorse.
When theeues fall owt trew men come to their good.
An yll wynd that bloweth no man to good.
All this wynd shakes no Corn.
Thear be more waies to the wood then one.
Tymely crookes the Tree that will a good Camocke be.
Better is the last smile then thefirst laughter.
No peny no pater noster.
Every one for himself and God for vs all.

Folio 93, front.

Long standing and small offring.
The catt knowes whose lippes she lickes.
As good neuer a whitt as neuer the better.
fluvius quae procul sunt irrigat.
As far goeth the pilgrymme as the post.
Cura esse quod audis.
[Greek: Erga neon Bomlai de meson enchai de geronton.]

Taurum tollet qui vitulum sustulerit.
Lunae radijs non maturescit Botrus.
Nil profuerit Bulbus; y'e potado will doe no good.
Dormientis rete trahit The sleeping mans nett draweth.
ijsdem e literis efficitur Tragedia et Comedia.
Tragedies and Comedies are made of one Alphabett.
Good wyne needes no bush.
Heroum filij noxae.
The sonnes of demy goddes demy men.
Alia res sceptrum alia plectrum
fere danides.[20]
Abore dejecta quivis ligna colligit.
The hasty bytch whelpes a blind lytter.
Priscis credendum.
We must beleeue the wytnesses are dead.
Thear is no trusting a woman nor a tapp.

Folio 93, back.

Not onely y'e Spring but the Michelmas Spring.
Virj iurejurandi pueri talis fallendj.
Ipsa dies quandoque parens quandoque noverca est.
Vbj non sis qui fueris non esse cur velis viuere.
Compendiaria res improbitas.
It is in action as it is in wayes; comonly the nearest
is the fowlest.
Lachrima nil citius arescit.
woorke when God woorkes.
A shrewd turn comes vnbidden.
Hirundines sub eodem tecto ne habeas.
A thorn is gentle when it is yong.

Aut regem aut fatuum nasci oportet (of a free jester).
Exigua res est ipsa Justitia.
Quae non posuistj ne tollas.
Dat veniam coruis vexat Censura columbas.
Lapsa lingua verum dicit.
The toung trippes vpon troth.
The evill is best that is lest [best?] knowen.
A mercury cannot be made of every wood (bvt priapus may).
Princes haue a Cypher.
Anger of all passions beareth the age lest [best?].
One hand washeth another.
Iron sharpeth against Iron.

Folio 94, front.

Eyther bate conceyte or putt to strength.
faciunt et sphaceli Immunitatem.
He may be a fidler that cannot be a violine.
Milke the staunding Cowe. Why folowe yow the flyeng.
He is the best prophete that telleth the best fortune.
Garlike and beans
like lettize like lips.
Mons cum monte non miscetur.
Hilles meet not.
A northen man may speake broad.
Haesitantia Cantoris Tussis.
No hucking Cator buyeth good achates.
Spes alit exules.
Romanus sedendo vincit.

Yow must sowe w'th the hand not w'th the baskett.
Mentiuntur multa cantores (few pleasing speches true).
It is noth if it be in verse.
Leonis Catulum ne alas.
He cowrtes a fury.
Dij laneos habent pedes (They leaue no prynt).
The weary ox setteth stronger.
A mans customes are the mowldes whear his fortune is cast.

Folio 94, back.

Beware of the vinegar of sweet wyne.
Adoraturj sedeant.[21]
To a foolish people a preest possest.
The packes may be sett right by the way.
It is the Cattes nature and the wenches fault.
Coene fercula nostre.
Mallem conviuis quam placuisse cocis.
Al Confessor medico e aduocato.
Non si de tener [tena?] il ver celato.
Assaj ben balla a chi fortuna suona.
A yong Barber and an old phisicion.
Buon vin Cattina testa dice il griego.
Buon vin fauola lunga.
good watch chazeth yll aduenture.
Campo rotto paga nuoua.
Better be martyr then Confessor.
L'Imbassador no porta pena.
Bella botta non ammazza vecello.

A tender finger maketh a festred sore.
A catt will neuer drowne if she see the shore.
Qui a teme [temor?] a lie.
He that telleth tend [tond?] lyeth is eyther a foole
himself or he to whome he telles them.
Che posce a [ci?] Cana pierde piu che guadagna.

Folio 95, front.

Ramo curto vindimi lunga
Tien l'amico tuo con viso suo.
Gloria in the end of the salme
An asses trott and a fyre of strawe dureth not
Por mucho madrugar no amanece mas ayna
Erly rising hasteneth not y'e morning.
Do yra el Buey que no are?
Mas vale buena quexa que mala paga
Better good pleint then yll pay
He that pardons his enemy the amner shall haue
his goodes
Chi offendi maj perdona
He that resolues in hast repentes at leasure
A dineros pagados brazos quebrados.
Mas uale bien de lexos que mal de cerca.
El lobo & la vulpeja son todos d'vna conseja
No haze poco quien tu mal echa a otro (oster before)
El buen suena, el mal buela.
At the trest of the yll the lest
Di mentira y sagueras verdad
Tell a lye to knowe a treuth
La oveja mansa mamma su madre y agena

En fin la soga quiebra por el mas delgado.
Quien ruyn es en su villa ruyn es en Sevilla
Quien no da nudo pierde punto
Quien al Ciel escupe a la cara se le buelve
Covetousenesse breakes the sacke
Dos pardales a tua espiga haze mala ligua

Folio 95, back.

Quien ha las hechas ha las sospechas.
La muger que no vera no haze larga tela
Quien a las hechas ha las sospechas.
Todos los duelos con pan son buenos.
El mozo por no saber, y el viejo por no poder dexan las cosas pierder.
La hormiga quandose a de perder nasiente alas
De los leales se hinchen los huespitales.
Dos que se conoscan de lexos se saludan.
Bien ayrna quien mal come.
Por mejoria mi casa dexaria
Hombre apercebido medio combatido
He caries fier in one hand and water in the other
To beat the bush while another catches the byrd
To cast beyond the moone
His hand is on his halfpeny
As he brues so he must drinke
Both badd me God speed but neyther bad me wellcome
To bear two faces in a whood
To play cold prophett
To sett vp a candell before the devill
He thinketh his farthing good syluer

Folio 96, front.

Let them that be a cold blowe at the cold.
I haue seen as farre come as nigh
The catt would eat fish but she will not wett her foote
Jack would be a gentleman if he could speake french
Tell your cardes and tell me what yow haue wonne
Men know how the markett goeth by the markett men.
The keyes hang not all by one mans gyrdell.
While the grasse growes the horse starueth
I will hang the bell about the cattes neck.
He is one of them to whome God bedd heu
I will take myne altar in myne armes
for the mooneshyne in the water
It may ryme but it accords not
To make a long haruest for a lyttell corn

Folio 96, back.

Neyther to heavy nor to hott
Soft for dashing
Thowght is free
The deuill hath cast a bone to sett strife
To putt ones hand between the barke and the Tree
Who meddles in all thinges may shoe the gosling
Let the catt wynke and lett the mowse runne
He hath one pointe of a good haulke he is handy
The first poynt of a faulkener to hold fast
Ech finger is a thumb
Owt of Gods blessing into the warme sune.
At eve[r]y dogges barke to awake

A lone day
My self can tell best where my shoe wringes me
A cloke for the Rayne
To leap owt of the frieng pan into the fyre
Now toe on her distaff then she can spynne
To byte and whyne
The world runs on wheeles
He would haue better bread than can be made of whea[t]
To take hart of grace

Folio 97, front.

Thear was no more water then the shipp drewe
A man must tell yow tales and find yow ears
Haruest ears (of a busy man).
When thrift is in the feeld he is in the Towne
That he wynnes in y'e hundreth he louseth in the Shyre
To stumble at a strawe and leap over a bloc
To stoppe two gappes with one bush
To doe more than the preest spake of on Sunday
To throwe the hatchet after the helve
Yow would be ouer the stile before yow come at it.
Asinus avis (a foolish conjecture).
Herculis Cothurnos aptare infantj
To putt a childes leg into Hercules buskin
Jupiter orbus
Tales of Jupiter dead withowt yssue
Juxta fluuium puteum fodere
To dig a well by the Ryuer side
A ring of Gold on a swynes snowte
To help the sunne with lantornes

In ostio formosus (gratiows to shew)
Myosobae flyflappers (offyciows fellowes)
[Greek: Adelphizein]. To brother it (fayre speech)
Jactare iugum To shake the yoke
When It was to salt to wash it with fresh water
(when speach groweth in bi … to fynd taulke
more gratfull)

Folio 97, back.

Mira de lente
Quid ad farinas.
Quarta luna Natj (Hercules nativity).
Olle amicitia.
Venus font.
Utraque nutans sententia
Hasta caduceum
The two that went to a feast both at dyner and
supper neyther knowne, the one a tall the other
a short man and said they would be one
anothers shadowe. It was replied it fell owt fitt,
for at noone the short man mowght be the long
mans shadowe and at night the contrary.
A sweet dampe (a dislike of moist perfume).
Wyld tyme on the grownd hath a sent like a Cypresse chest.
Panis lapidosus grytty bread
Plutoes Helmett; secrecy Invisibility
Laconismus
Omnem vocem mittere (from inchantmentes)
Tertium caput; (of one ouercharged that hath a burden
upon eyther showder and the 3rd. vpon his head).

Triceps mercurius (great cunyng).
Creta notare (chaulking and colouring).

Folio 98, front.

Vt phidie signum (presently allowed).
Jovis sandalium; (Jupiters slipper, a man onely esteemed for nearnesse).
Pennas nido majore extendere.
Hic Rhodus Hic Saltus (exacting demonstracion).
Atticus in portum
Divinum excipio sermonem
Agamemnonis hostia
With sailes and owres
To way ancre.
To keep strooke (fitt conjunctes).
To myngle heauen and earth together.
To stirr his curteynes (to raise his wyttes and sprites).
Comovere sacra
To iudg the Corne by the strawe.
Domj Conjecturam facere [Greek: oikothen eikax[ein]]
To divine with a sive (?)
Mortuus per somnum vacabis curis (of one that interpretes all thinges to the best).
Nil sacrj es (Hercules to adonis).
Plumbeo iugulare gladio (A tame argument).
Locrensis bos (a mean present).
Ollaris Deus. (a man respected for his profession withowt woorth in himself).
In foribus Vrceus; an earthen pott in the threshold
Numerus

Folio 98, back.

To drawe of the dregges
Lightenyng owt of a payle
Durt tramped w'th bloude.
Ni pater esses
Vates secum auferat omen.
In eo ipso stas lapide vbj praeco praedicat, of one that is abowt to be bowght and sold.
Lydus ostium claudit (of one that is gone away w'th his purpose).
Vtranque paginam facit An auditors booke (of one to whome both good and yll is imputed).
Non navigas noctu (of one that govern[s] himself acaso [bycause] the starres which were wont to be the shipmans direction appear but in the night).
It smelleth of the lampe
You are in the same shippe
Between the hamer and the Andville
Res est in cardine
Vndarum in vinis
Lepus pro carnibus (of a man persecuted for profite and not for malice).
Corpore effugere
Nunquid es saul inter prophetas
A dog in the manger
[Greek: Oaekonous] (a howsedowe a dedman).

Folio 99, front.

Officere luminibus
I may be in their light but not in their way.
Felicibus sunt et timestres liberj.
To stumble at the threshold
Aquilae senectus
Of the age now they make popes of
Nil ad Parmenonis suem
Aquila in nubibus (a thing excellent but remote).
Mox Sciemus melius vate
In omni fabula et Daedali execratio (of one made a party to all complaintes).
Semper tibj pendeat hamus.
Res redit ad triarios.
Tentantes ad trojam pervenere greci
Cignea cantio
To mowe mosse (vnseasonable taking of vse or profite).
Ex tripode
Ominabitur aliquis te conspecto.
He came of an egge
Leporem comedit

Folio 99, back.

H [Greek: Ae tan ae epi tun]
Dormientis rete trahit
Vita doliaris
He castes another mans chaunces.
I neuer liked proceeding vpon Articles before bookes nor betrothinges before mariages.
Lupus circa puteum chorum agit

The woolue danceth about the welle.
Spem pretio emere
Agricola semper in nouum annam diues.
To lean to a staffe of reed
fuimus Troes.
Ad vinum disertj.
To knytt a rope of sand.
Pedum visa est via
Panicus casus
Penelopes webb
[Greek: skiamachein]
To striue for an asses shade
Laborem serere.
Hylam inclamat.
[Greek: theomachein]
To plowe the wyndes
Actum agere
Versuram soluere To euade by a greater mischeef.
Bulbos querit (of those that looke downe
Between the mowth and the morsell).
A Buskin (that will serve both legges
not an indifferent man but a dowble spye).

Folio 100, front.

Chameleon Proteus, Euripus.
Mu[l]ta novit uulpes sed Echinus unum magnum
Semper Africa aliquid monstrj parit
Ex eodem ore calidum et frigidum.
Ex se finxit velut araneus
Laqueus laqueum cepit.

Hinc ille lachrime; Hydrus in dolio
Dicas tria ex Curia (liberty vpon dispaire)
Argi Collis (a place of robbing).
Older then Chaos.
Samiorum flores
A bride groomes life
Samius comatus (of one of no expectacion and great proof).
Adonis gardens (thinges of great pleasure but soone fading).
Que sub axillis fiunt.
In crastinum seria.
To remooue an old tree
[Greek: Kymakophon] (of one that fretteth and vaunteth boldnesse to vtter choler).
To bite the br[i]dle
Lesbia regula.
Vnguis in vlcere
To feed vpon musterd
In antro trophonij (of one that neuer laugheth).
Arctum annulum ne gestato.

Folio 100, back.

Areopagita; Scytala.
Cor ne edito.
Cream of Nectar
Promus magis quam Condus.
He maketh to deep a furrowe
Charons fares
Amazonum cantile[n]a; The Amazons song

(Delicate persons).
To sow curses.
To quench fyre with oyle
Ex ipso boue lora sumere.
Mala attrahens ad se vt Cesias nubes
Pryauste gaudes gaudium.
Bellerophontis literae (producing lettres or evidence against a mans self).
Puer glaciem.
To hold a woolf by the ears
fontibus apros, floribus austrum
Softer then the lippe of the ear
More tractable then wax
Aurem vellere.
[Greek: Aeeritrimma]; frippon
To picke owt the Ravens eyes.
Centones
Improbitas musce (an importune that wilbe soone awnswered but straght in hand agayne).
Argentangina, sylver mumpes
Lupi illum videre priores
Dorica musa.
To looke a gyven horse in the mowth.

Folio 101, front.

Vlysses pannos exuit.
fatis imputandum
Lychnobij
Terrae filius
Hoc jam et vates sciunt

Whear hartes cast their hornes
few dead byrdes fownd.
Prouolvitur ad milvios (a sickly man gladd of the spring).
Amnestia
Odi memorem compotorem.
Delius natator.
Numeris platonis obscurius
Dauus sum non Oedipus
Infixo aculeo fugere
Genuino mordere.
Ansam quaerere.
Que sunt apud inferos sermones.
Et Scellij filium abominor (of him that cannot endure the sound of a matter; from Aristocrates Scellius sonne, whome a man deuoted to a democracy said he could not abide for the nearnesse of his name to an Aristocracy).
Water from the handes (such doctrynes as are polluted by custome).

Folio 101, back.

famis campus an yll horse kept
The thredd is sponne now nedes the neadle
quadratus homo. a Cube.
fenum habet in Cornu.
Armed intreaty.
Omnia secunda saltat senex.
[Greek: theon cheires]
Mopso Nisa datur

Dedecus publicum.
Riper then a mulbery.
Tanquam de Narthecio
Satis quercus; Enowgh of Acornes.
Haile of perle.
Intus canere.
Symonidis Cantilena.
Viam qui nescit ad mare
Alter Janus.
To swyme withowt a barke
An owles egg.
Shake another tree
E terra spectare naufragia
In diem vivere
Vno die consenescere.
[Greek: Porro dios te K[a]i keraunou]
Servire scenae.
Omnium horarum homo
Spartae servi maxime servi
Non sum ex istis heriobus (*sic*) (potentes ad nocendum)

Folio 101, back — continued.

Scopae dissolute
Clavum clauo pellere
Extra querere sese

Folio 102, front.

Cumjnj sector
Laconice lunae.

Coruus aquat.
Ne incalceatus in montes.
Domj Milesia
Sacra hec non aliter constant.
Gallus insistit
Leonis vestigia quaeris (ostentation with couardize)
fumos vendere
Epiphillides.
Calidum mendacium optimum
Solus Currens vincit.
Vulcaneum vinclum.
Salt to water (whence it came).
Canis seviens in lapidem
Aratro iaculari.
Semel rubidus decies pallidus.
Tanto buon che ual niente
So good, as he is good for nothing.
The crowe of the bellfry.
The vinegar of sweet wyne.
En vne nuit naist vn champignon.
He hath more to doe then the ovens in Christmas.
piu doppio ch' una zevola
Il cuopre vn altare & discuopre l' altro
He will hide himself in a mowne medowe
Il se crede segnar & se da de dettj ne gli occhi
He thinkes to blesse himself and thrustes his fingers into his eyes

Folio 102, back.

He is gone like a fay withowt his head
La sopra scritta e buona

La pazzia li fa andare |
La vergogna li fa restare |
Mangia santj & caga Diauolj.
Testa digiuna, barba pasciuta.
L'asne qui porte le vin et boit l'eau
lyke an ancher that is euer in the water and will
neuer learn to swyme
He doth like the ape that the higher he clymbes the
more he shews his ars.
Se no va el otero a Mahoma vaya Mahoma al otero.
Nadar y nadar y ahogar a la orilla
llorar duelos agenos
Si vos sabes mucho tambien se yo mi salm [o?]
Por hazer mi miel comieron mj muxcas
Come suol d'Invierno quien sale tarde y pone presto.
Lo que con el ojo veo con el dedo lo adeuino
Hijo no tenemos y nombre lo ponemos.
Por el buena mesa y mal testamento.
Era mejor lamiendo que no mordiendo
Perro del hortelano
Despues d'yo muerto ni vinna ni huerto
Perdj mj honor hablando mal y oyendo peor
Tomar asino que me lleue y no cauallo que me derruque.

Folio 103, front.

So many heades so many wittes
Happy man happy dole
In space cometh grace
Nothing is impossible to a willing hand
Of two ylles chuze the lest.

Better to bow then to breake
Of suffrance cometh ease
Two eyes are better then one.
Leaue is light
Better vnborn then vntaught.
All is well that endes well
Of a good begynyng comes a good ending
Thinges doone cannot be vndoone
Pride will haue a fall
Some what is better then nothing
Better be envyed then pytied
Every man after his fashon
He may doe much yll ere he doe much woorse
We be but where we were
Vse maketh mastery
Loue me lyttell love me long.
They that are bownd must obey
Foly it is to spurn against the pricke
Better sitt still then rise and fall.
Might overcomes right
No smoke w'th owt some fire
Tyme tryeth troth
Make not to sorowes of one

Folio 103, back.

Thear is no good accord
whear euery one would be a lord
Saieng and doing are two thinges
Better be happy then wise
Who can hold that will away

Allwaies let leasers haue their woordes
Warned and half armed
He that hath an yll name is half hanged
Frenzy Heresy and jalousy are three
That seeldome or neuer cured be
That the ey seeth not the hart rueth not
Better comyng to the ending of a feast then to the
begynyng of a fray
Yll putting a swoord in a mad mans hand
He goes farre that neuer turneth
Principium dimidium totius
Quot homines tot sententiae
Suum cujque pulchrum.
Que supra nos nihil ad nos
Ama tanquam osurus oderis tanquam amaturus.
Amicorum omnia communia
Vultu sepe leditur pietas
Fortes fortuna adjuuat.
Omne tulit punctum.
In magnis et uoluisse sat est
Difficilia quoee pulchra.
Turn tua res agitur paries cum proximus ardet
Et post malam segetem serendum est
Omnium rerum vicissitudo

Folio 103 back — continued.

In nil sapiendo vita jucundissima
Parturiunt montes nascetur ridiculus mus
Dulce bellum inexpertis
Naturam expellas furca licet vsque recurret.

Folio 104, front.

Quo semel est imbuta recens servabit odorem
Bis dat qui cito dat
Consciencia mille testes
In vino veritas
Bonae leges ex malis moribus
Nequicquam sapit qui sibj non sapit
Summum jus summa injuria
Sera in fundo parsimonia
Optimum non nasci
Musa mihi causas memora
Longe
Ambages sed summa sequar fastigia rerum
Causasque innecte morandj
Incipit effari mediaque in voce resistit
Sensit enim simulata voce locutam
quae prima exordia sumat
Haec alternantj potior sententia visa est.
Et inextricabilis error
Obscuris vera inuolvens.
Hae tibi erunt artes
Sic genus amborum scindit se sanguine ab vno.
Varioque viam sermone leuabat
Quid causas petis ex alto fiducia cessit
Quo tibj Diua mej
Causas nequicquam nectis inanes
quid me alta silentia cogis
Rumpere et obductum verbis vulgare dolorem
Nequicquam patrias tentasti lubricus artes
Do quod uis et me victusque uolensque remitto

Folio 104, front — continued.

Sed scelus hoc meritj pondus et instar habet
Quaeque prior nobis intulit ipse ferat
Officium fecere pium sed invtile nobis
Exiguum sed plus quam nihil illud erit
Sed lateant vires nec sis in fronte disertus
Sit tibj credibilis sermo consuetaque verba
praesens vt videare loqui

Folio 104, back.

Ille referre aliter sepe solebat idem
Nec uultu destrue verba tuo
Nec sua vesanus scripta poeta legat
Ars casum simulet
Quid cum legitima fraudatur litera uoce
Blaesaque fit iusso lingua coacta sono
Sed quae non prosunt singula multa iuuant.
Sic parvis componere magna solebam
Alternis dicetis
paulo majora canamus
Non omnes arbusta iuuant
Et argutos inter strepere anser olores.
Causando nostros in longum ducis amores
Nec tibj tam sapiens quisquam persuadeat autor
Nec sum animj dubius verbis ea vincere magnum
quam sit et angustis hunc addere rebus honorem
Sic placet an melius quis habet suadere
Quamquam ridentem dicere verum
quis vetat

Sed tamen amoto quaeramus seria ludo
Posthabuj tamen illorum mea seria ludo
O imitatores seruum pecus
Quam temere in nobis legem sancimus iniquam.
mores sensusque repugnant
Atque ipsa vtilitas justj prope mater et equi
dummodo visum
Excutiat sibj non hic cuiquam parcit amico
Nescio quod meritum nugarum totus in illis
Num[22] quid vis occupo

Folio 104, back — continued.

Noris nos inquit doctj sumus
O te bollane cerebrj
Felicem aiebam tacitus.

Folio 105, front.

ridiculum acrj
Fortius et melius magnas plerunque secat res.
At magnum fecit quod verbis graeca latinis }
Miscuit o serj studiorum }
Nil ligat exemplum litem quod lite resoluit
Nimirum insanus paucis videatur eo quod }
Maxima pars hominum morbo laborat eodem }
Neu si vafer vnus et alter
Insidiatorem praeroso fugerit hamo
Aut spem deponas aut artem illusus omittas
gaudent praenomine molles }
auriculae }
Renuis tu quod jubet alter

Qui variare cupit rem prodigaliter unam.
Et adhuc sub judice lis est.
Proijcit ampullas et sesquipedalia verba
Quid dignum tanto feret hic promissor hiatu
Atque ita mentitur sic veris falsa remittet
tantum series juncturaque pollet
Tantum de medio sumptis accedit honoris
Ergo fungar vice cotis acutum }
Reddere que possit ferrum exors ipsa secandj }
Haec placuit semel haec decies repetita placebit
Fas est et ab hoste docerj
Vsque adeo quod tangit idem est tamen vltima
Quis furor auditos inquit praeponere visis [distans].
Pro munere poscimus vsum
Inde retro redeunt idemque retexitur ordo
Nil tam bonum est quin male narrando possit
deprauarier

Folio 105, back.

Furor arma ministrat
Pulchrumque morj succurrit in armis
Aspirat primo fortuna laborj
Facilis jactura sepulchrj
Cedamus phoebo et monitj meliora sequamu[r]
Fata uiam invenient
Degeneres animos timor arguit
Viresque acquirit eundo
Et caput inter nubila condit
Et magnas territat vrbes
Tam ficti prauique tenax quam nuntia verj

Gaudens et pariter facta atque infecta canebat
Nusquam tuta fides
Et oblitos famae meliori amantes
Varium et mutabile semper
Femina
Furens quid femina possit
Quo fata trahunt retrahuntque sequamur
Quicquid id est superanda est omnis fortun[a] ferendo
Tu ne cede malis sed contra audentior i[to]
Hoc opus hic labor est
Nullj fas casto sceleratum insistere li[men]
Discite justitiam monitj.
Quisque suos patimur manes
Neu patrie validat[23] in viscera vertite vires
Verique effeta senectus.
At patiens operum paruoque assueta iuuen[tus]
Juno vires animumque ministrat
Nescia mens hominum fatj sortisque futur[ae]
Et servare modum rebus sublata secund[is]

Folio 106, front.

Spes sibi quisque
Nee te vllius violentia vincat
Respice res hello varias
Credidimus lachrimis an et hae simulare docentur
He quoque habent artes quaque iubentur eunt
Quaecunque ex merito spes venit equa venit
Simplicitas digna fauore fuit
Exitus acta probat careat successibus opto
Quisquis ab euentu facta notanda putet.

Ars fit vbj a teneris crimen condiscitur annis
Jupiter esse pium statuit quodcunque iunaret
Non honor est sed onus
Si qua voles apte nubere nube parj
Perdere posse sat est si quern iuuat ista potestas.
Terror in his ipso major solet esse periclo
Quaeque timere libet pertimuisse pudet
An nescis longas regibus esse manus
Vtilis interdum est ipsis injuria passis
Fallitur augurio spes bona sepe suo
Quae fecisse iuuat facta referre pudet
Consilium prudensque animj sententia jurat
Et nisi judicij vincula nulla valent
Sin abeunt studia in mores
Illa verecundis lux est praebenda puellis
Qua timidus latebras speret habere pudor
Casta est quam nemo rogauit
Quj non vult fierj desidiosus amet
Gratia pro rebus merito debetur inemptis
Quern metuit quisque perisse cupit

Folio 106, back.

A late promus of formularies
and elegancies

Synanthr
Synanthropy

Folio 107, front.

He that owt leaps his strength standeth not
He keeps his grownd; Of one that speaketh certenly
& pertinently
He lighteth well; of one that concludeth his speach
well
Of speaches digressive; This goeth not to the ende
of the matter; from the lawyers,
for learnyng sake.

Mot. of the mynd explicat in woords implicat in
thowghts
I iudg best implicat in thowg. or of trial or mark
bycause of swiftnes collocat. & differe & to
make woords sequac.

Folio 107, back.

[Blank]

Folio 108, front.

Vpon Impatience of Audience

Verbera sed audi. The fable of the syrenes
Auribus mederj difficillimum. Placidasque viri deus obstruit
Noluit Intelligerevt bene aures
ageret
The ey is the gate of the
affection, but the ear
of the vnderstanding

Vpon question to reward evill w'th evill

Noli aemularj in malig-Cum perverso perverteris;

nantibus lex talionis
Crowne him wth tols (?) Yow are not for this world
Nil malo quam illos simil-Tanto buon cheval niente
les esse suj et me mej

Vpon question whether a man should speak or forbear speach

Quia tacuj inveterauerunt Obmutuj et non aperuj os
ossa mea (speach may meum quoniam tu fecistj
now & then breed It is goddes doing.
smart in y'e flesh; but Posuj custodiam Orj
keeping it in goeth to meo cum consisteret
y'e bone). peccator aduersum me.
Credidi propter quod Ego autem tanquam
locutus sum. surdus nonaudiebam et
Obmutuj et humiliatus tanquam mutus non
sum siluj etaim a bonis aperiens os suum
et dolor meus re-
nouatus est.

Folio 108, back.

Benedictions and maledictions
Et folium eius non defluet
Mella fluant illj ferat
et rubus asper amonium
Abominacion

Dij meliora pijs
Horresco referens

Folio 109, front.

Per otium To any thing impertinent.
Speech yt hangeth not together nor is concludent.
Raw sylk; sand.
Speech of good & various wayght but not neerely applied; A great vessell yt cannot come neer land.
Of one yt. rippeth things vp deepely. He shooteth to high a compass to shoote neere.
Y'e law at Twicknam for mery tales
Synanthropie

Folio 109, back.

[Blank]

Folio 109c, front.

[Blank]

Folio 109d, back. Synanthropie

Folio 110, front.

Play.

The syn against y'e holy ghost termd in zeal by one of y'e fathers
Cause of Oths; Quarells; expence & vnthriftynes; ydlenes & indisposition of y'e mynd to labors.
Art of forgetting; cause of society acquaintance familiarity in frends; neere & ready attendance

in servants; recreation & putting of melancholy;
Putting of malas curas & cupiditates.
Games of Actiuity & passetyme; *sleight* of Act. of
strength quicknes; quick of y'e hand; legg, the
whole mocion; strength of arme; legge; *Of
Activity of sleight*.
Of passetyme onely; of hazard, of play mixt
Of hazard; meere hazard Cunnyng in making yor.
game; Of playe: exercise of attention;
of memory; of Dissimulacion; of discrecion;
Of many hands or of receyt; of few; of quick
returne tedious; of praesent iudgment; of
vncerten yssue.
Seuerall playes or Ideas of play.
Frank play; wary play, venturous not venturous
quick slowe;
Oversight Dotage Betts Lookers on Judgment
groome porter; Christmas; Invention for hunger
Oddes; stake; sett;
He that folowes his losses & giueth soone over at
wynnings will never gayne by play
Ludimus incauti studioque aperimur ab ipso

Folio 110, front — continued.

He that playeth not the begynnyng of a game well at
tick tack & y'e later end at yrish shall never
wynne
Frier Gilbert
Y'e lott; earnest in old tyme sport now as musik
owt of church to chamber

Folio 110, back.

[Blank]

Folio 111.

[Blank]

Folio 112, front.

good morow
Good swear[24]
Good trauaile
good hast
good matens
good betymes; bonum mane
bon iouyr. Bon iour; (bridgrome).
good day to me & good morow to yow.
I haue not sayd all my prayers till I haue bid yow
good morow.
Late rysing fynding a bedde,
early risinge, summons to ryse
Diluculo surgere saluberrimum est.
Surge puer mane sed noli surgere vane.
Yow will not rise afore yor betters
(y'e sonne).
Por mucho madrugar no amanece mas ayna.
Qui a bon voisin a bon matin
(lodged next);
Stulte quid est somnus gelidae nisi mortis imago
Longa quiescendi tempora fata dabunt.
Albada; golden sleepe.

early vp & neuer y'e neere.
The wings of y'e mornyng.
The yowth & spring of y'e day
The Cock; The Larke.
Cowrt howres.

Folio 112, front — continued.

Constant; abedd when yow are bedd; & vp when
yow are vp.
Trew mens howres.
Is this your first flight x I doe not as byrds doe for
I fly owt of my feathersz Is it not a fayre one
Sweet, fresh of y'e mornyng.
I pray god your early rysing doe yow no hurt;
Amen when I vse it.
I cannot be ydle vp as yow canne.
Yow could not sleep for your yll lodging; I cannot
gett owt of my good lodginge.
Yow have an alarum in your head
Block heads & clock heads.
There is Law against lyers a bedde.
Yow haue no warrant to ly a bedde
Synce yow are not gott vp turn vp.
Hott cocckles withowt sands

god night
Well to forgett;
I wish yow may so well sleepe as yow may not fynd
yor yll lodging.

NOTE. — This folio is written in two columns. The second column begins with the line, “I pray god your early rysing.”

*

Folio 112, back.

[Blank]

Folio 113, front.

[Blank]

Folio 113, back.

fourmes & elegancyes.

Folio 114, front.

Formularies Promus 27 Jan. 1595.

Against con-} Es. conceyt of // ceyt of diffi-}Tentantes ad Trojam peruenere Impossibili- // culty or im-} ties & Ima- // possibility ginations // vt s[upra] ad id Ess. indear- // Abstinence}Qui in agone contendit a multis ing generali-// negatiues } abstinet. ties & prae- // cepts // vt s[upra] All the commaundments nega ad id tiue saue two ad id //

Parerga; mouente sed nil pro-ad id. and Curious; Busy extenuating // without jug mouentes operosities, nil ad deuises & // ment good summam. particulars. direction Claudus I via ad id. vt s[upra] [25]Direction}to give the grownd in bowling. // generall. } vt sup[ra] Like tempring with phisike a ad id. // good diett much better.

Zeal affection}Omni possum in eo qui me Idea. zeal alacrity } confortat & good affec-// tion ye e. //

vt s[upra] Possunt quia posse videntur ad id. vt s[upra] Exposition of Not Overweenning but ouerwilling. ad id. // vt s[upra] Goddes presse; Voluntaries ad id. // detraction Chesters wytt to depraue & otherwise not wyse [26]s. P. s. J.//

Hast In actions as in wayes the nearest Ind my stay// ikpatience y'e fowlest

*

Folio 114, back.

[Blank]

Folio 115, front.

[Blank]

Folio 115, back.
ffrancys Dalle
fragments of Elegancyes

Folio 116, front.

//Quod adulationis nomine dicitur bonum quod // obtrectationis malum. Cujus contrarium majus; majus aut priuatio cujus minus animis.# //Cujus opus et uirtus majus majus cujus minus minus //quorum cupiditates majores aut meliores, //quorum scientiae aut artes honestiores. //quod uir melior eligeret vt injuriam potius pati // quam facere. //quod manet melius quam quod transit. //quorum quis autor cupit esse bonum, cujus horret // malum. //quod quis amico cupit facere bonum quod inimico // malum. //Diuturniora minus diuturnis Conjugata //quod plures eligunt potius quam quod pauciores. //quod controuertentes dicunt bonum perinde ac omnes quod scientes et potentes, quod judicantes. //Quorum praemia

majora, majora bona, quorum mulctae majores, majora mala. Quas confessis et tertijs majoribus majora. //quod ex multis constat magis bonum cum multi // articulj bonj dissectj magnitudinem prae se ferunt Natiua ascitis. //Qua supra aetatem praeter occasionem aut oportuni- // tate praeter naturam toe; praeter conditionem // temporis praeter naturam personae vel instru- // mentivel iuuamentimajora quam quae secundum.

Folio, 116 back.

//quae in grauiore tempore vtilia vt in morbo senectute // aut aduersis. //Ex duobus medijs quod propinquius est fruj //Quae tempore futuro et vltimo quia sequens tempus // evacuat praeterita Antiqua novis noua antiquis Consueta nouis noua consuetis //quod ad veritatem magis quam ad opinionem Ejus // [27]ante, quae ad opinionem pertinet, ratio est ac // modus, quod quis sj clam fore putaret non // eligeret //Polychreston vt diuitiae, robur, potentia, facultates // animj # Ex duobus quod tertio aequali adjunctum majus ipsa reddit # Quae non latent cum adsunt, quam quae latere possunt majora. //quod magis ex necessitate vt oculus vnus lusco //quod expertus facile reliquit //quod quis cogitur facere malum //quod sponte fit bonum //quod bono confesso redimitur

*

Folio 117, front

In deliberatives and electives

Folio 117, back.

Cujus excusatio paratior est vel venia indulta inagis minus malum.

Folio 118, front.

Melior est oculorum visio quam animj progressio //Spes in dolio remansit sed non vt antedotum sed vt // major morbus Spes omnis in futuram vitam consumendus sufficit praesentibus bonis purus sensus. Spes vigilantis somnium; vitae summa breuis spem nos uetat inchoare longam. //Spes facit animos leues timidos inaequales peregrinantes //Vidi ambulantes sub sole cum adolescente secundo // qui consurget post eum. //Imaginationes omnia turbant, timores multiplicant // voluptates corrumpunt. //Anticipatio timores[28]salubris ob inventionem remedij // spei institit[29] Imminent futuro, ingrati in praeteritum semper adolescentes //Vitam sua sponte fluxam magis fluxam reddimus per continuationes spe Praesentia erunt futura non contra

*

Folio 118, back.

[Blank]

Folio 119, front.

[Blank]

Folio 119, back.

[Blank]

Folio 120, front.

The fallaxes of y'e 3 and y'e assurance of Erophil.
to fall well euery waye
Watry impressions, fier elementall fier aethereall.
Y'e memory of that is past cannot be taken from him.
All 3 in purchaze nothing in injoyeng.

Folio 120, back.

[Blank]

Folio 121, front.

[Blank]

Folio 121, back.

[Blank]

Folio 122, front.

// Quod inimicis nostris gratum est ac optabile vt // *nobis* eveniat malum, quod molestiae et terrorj // est bonum. Metuo danaos et dona ferentes Hoc Ithacus velit et magno mercentur Atridae. Both parties haue wyshed battaile The Launching of y'e. Imposture by him that intended murder. Conciliam homines mala. a forein warre to appeas parties at home // Quod quis sibj tribuit et sumit bonum, quod in // alium transfert malum non tarn inuidiae impertiendae quam laudis com-municandae gratia loquor. // Quod quis facile impertit minus bonum quod quis // paucis et grauatim impertit majus bonum Te nunc habet ista secundum. // Quod per ostentationem fertur bonum, quod per // excusationem purgatur malum. // Nescio quid peccati portet haec purgatio. // Cuj sectae diuersae quae sibj quaeque praestantiam // vendicat secundas tribuit melior singulis // Secta Academicae quam Epicureus et stoicus sibi // tantum postponit // Neutrality.

Folio 122, back.

//Cujus exuperantia vel excellentia melior ejus et // genus melius. Bougeon de mars, enfant de paris. Whear they take Some thinges of lyttell valew but excellencye Some more indifferent and after one sort. //In quo periculosius erratur melius eo in quo erratur // minore cum periculo. //Quod rem integram seruat, melius eo a quo receptus // non est potestatem enim donat potestas autem

// bonum The tale of the frogges that were wyshed by one in a drowth to repayre to the bottome of a well, ay (?) but if water faile thear how shall we gett vp agayne //Quod polychrestum est melius quam quod ad vnum // refertur ob incertos casus humanos. //Cujus contrarium priuatio malum bonum cujus // bonum malum. //In quo non est satietas neque nimium melius eo in // quo satietas est //In quo vix erratur melius eo in quo error procliuis //Finis melior ijs quae ad finem; //Cujus causa sumptus facti et labores toleratj // bonum; si vt euitetur malum, //Quod habet riuales et de quo homines contendunt // bonum; de quo non est contentio malum. Differ, inter fruj et acquirere.

Folio 123, front.

// Quod laudatur et praedicatur bonum quod occultatur
// et uituperatur malum.
// Quod etiam inimicj et maleuoli laudant valde bonum,
// quod etiam amicj reprehendunt magnum malum.
Quod consulto et per meliora judicia proponitur
majus bonum.
// Quod sine mixtura malj melius quam quod refractum
// et non syncerum.
Possibile et facile bonum quod sine labore et paruo
tempore cont[ra] malum
Bona confessa jucundum sensu; comparatione.
Honor; voluptas;
Vita
bona ualetudo
suauia objecta sensuum;
Inducunt tranquillum sensum virtutes ob securitatem
et contemptum rerum humanarum; facultates
animk et rerum gerendarum ob spem et metum
subigendum; et diuiti …

Ex aliena opinione; laus.
Quae propria sunt et minus communicata; ob honor,
quae continent, vt animalia vt plantae et amplius;
sed id amplius potest esse malj.
Congruentia, ob raritatem et genium et proprietatem
vt in familijs et professionibus
Quae sibj deesse quis putat licet sint exigua

Folio 123, back.

ad quae natura procliues sunt
quae nemo abjectus capax est vt faciat
Majus et continens minore et contento
Ipsum quod suj causa eligitur
quod omnia appetunt.
quod prudentiam adepti eligunt
quod efficiendi et custodiendj vim habet.
Cuj res bonae sunt consequentes.
maximum maximo ipsum ipsis; vnde exuperant …
quae majoris bonj conficientia sunt ea majora sunt
bona.
quod propter se expetendum eo quod propter alios
Fall. in diuersis generibus et proportionibus
Finis non finis
Minus indigens eo quod magis indiget quod
paucioribus et facilioribus indiget
quoties ho (*sic*) sine illo fierj no (*sic*) potest, illud
sine hoc fierj potest illud melius
principium non principio; finis autem et principium
antitheta; non majus videtur principium quia
primum est in opere; contra finis quia primum

in mente; de perpetratore et consiliario.
Rarurn copiosis honores; mutton venison
Copiosum varit vsu: optimum aqua
difficiliora, facilioribus |
faciliora, difficilioribus |

Folio 124, front.

Quod magis a necessitate vt oculus vnus lusco.
Major videtur gradus priuationis quam diminutionis
Quae non latent cum adsunt majora quam que
latere possunt.
Quod expertus facile reliquit malum, quod mordicus
tenet bonum.
In aliquibus manetur quia non datur regressus
Quae in grauiore tempore vtilia vt in morbo
senectute aduersis.
The soldier like a coreselett; bellaria, et appetitiua,
redd hearing. Loue
Quod controuertentes dicunt bonum perinde ac
omnes.
Sermon frequented by papists and puritans;
Matter of circumstance not of substance
boriae penetrabile frigus adurit
Cacus oxen forwards and backwards
Not examyning.

Folio 124, back.

[Blank]

Folio 125, front.

[Blank]

Folio 125, back.

[Blank]

Folio 126, front.

Analogia Caesaris

Verb. et clausalae ad
exercitationem accentus
et ad gratiam sparsam
et ad suitatem

Sat that; (for admitt that) It is like Sr. *etc.* putting Peradventure can yow: sp. a man agayne into his (what can yow) tale interruted So much there is. fr.(neuer-Your reason thelesse) I haue been allwaies at See then bow. Sp. (Much his request; lesse) His knowledg lieth about Yf yow be at leasure fur-him nyshed *etc.* as perhappes Such thoughts I would yow are (in stead of are exile into into my not) dreames For the rest (a transition A good crosse poynt but concluding) the woorst cinq a pase The rather bycause contynuing anothers speach He will never doe his tricks To the end, sauing that, whereas yet (contynu-A proper young man and ance) and so of all kynds so will he be while he liues In contemplation (in con-2 of these fowre take them sideracon) where yow will Not praejudicing. I have knowne the tyme With this (cum hoc quod and it was not half an verificare vult) howre agoe Without that (adsque hoc Pyonner in the myne of quod) truth

Folio 126, front — continued.

for this tyme (when a man As please the painter
extends his hope or imag-A nosce teipsum (a chiding
inacion or beleefe to farre) or disgrace)
A mery world when such Valew me not y'e lesse by-
fellowes must correct cause I am yours.
(A mery world when the
simplest may correct).

Is it a small thing yt & (can
not yow not be content)
an hebraisme
What els? Nothing lesse.
It is not the first vntruth I
have heard reported nor
it is not y'e first truth I
haue heard denied.
I will prooue X
why goe and prooue it
Minerallwyttsstrongpoyson
yf they be not corrected.
O the'
O my I. St.
Beleeue it
Beleeue it not;
for a time
Mought it pleas god that
fr (I would to god) Neuer
may it please yow
As good as the best:
I would not but yow had
doone it (But shall I doe
it againe)

*

NOTE. — This folio is written in three columns. The third column begins, "It is a small thing."

Folio 126, back.

The sonne of some what y’e ayre of his behauior;
factious;
To frime (to Sp)[30]
Sp
To cherish or endear;
To vndeceyue. Sp to dis-
abuse
deliuer and vnwrapped
To discount (To Cleere)
Brazed (impudent
Brawned Seared) vn-
payned.
Vuelight (Twylight) band-
ing (factions).
Remoouing (remuant)
A third person (a broker)
A nose Cutt of; tucked vp.
His disease hath certen
traces
To plaine him on
Ameled (fayned counterfett)
in y’e best kynd.
Having (?) the vpper
grownd (Awthority)
His resorts (his Conceyts)
It may be well last for it
hath lasted well
Those are great with yow
y’t are great by yow

*

Folio 126, back — continued.

The Avenues; A back
thought.
Baragan; perpetuo Juuenis
A Bonance (a Caulme)
To drench to potion (to
insert)
Haggard insauvaged
Infistuled (made hollow
with malign deales).

Folio 127, front.

[Blank]

Folio 127, back.

Cursitours lament and cry
[31]Verba interjectiua siue ad
gratiam sparsam

Folio 128, front.

Semblances or popularities of good and evill w'th
their redargutions for Deliberacions
Cujus contrarium malum bonum, cujus bonum
malum.
Non tenet in ijs rebus quarum vis in temperamento
et mensura sita est.
Dum vitant stulti vitia in contraria currunt
X Media via nulla est quae nee amicos parit nee inimi-
cos tollit

Solons law that in states every man should declare
him self of one faction. Neutralitye:
Vtinam esses calidus aut frigidus sed quoniam tepidus
es eveniet vt te expuam ex ore meo.
Dixerunt fatui medium tenuere beatj
Cujus origo occasio bona, bonum; cujus mala malum.
Non tenet in ijs malis quae vel mentem informant,
vel affectum corrigunt, siue resipiscentiam in-
ducendo siue necessitatem, nec etiam in fortuitis.
No man gathereth grapes of thornes nor figges of
thistelles
The nature of every thing is best consydered in the
seed
Primum mobile turnes about all y'e rest of y'e Orbes.
A good or yll foundacion.
X Ex malis moribus bonae leges.
[Greek: pathaemata maaemata]
When thinges are at the periode of yll they turn
agayne

Folio 128, front — continued.

Many effectes like the serpent that deuoureth her
moother so they destroy their first cause as
inopia luxuria *etc.*
The fashon of D. Hert. to the dames of Lond. Your
way is to be sicker
Usque adeo latet vtilitas
Aliquisque malo fuit vsus in illo

Folio 128, back.

Quod ad bonum finem dirigitur bonum, quod ad mulum malum

Folio 129 front.

[Blank]

Folio 129 back.

Philologia colors of good and euill

Folio 130 front.

Some choice Frensh Proverbes.

II a chie en son chapeau et puis s'en va couvert
Par trop debatre la verite se perd.
Apres besogne fait le fou barguine.
L'hoste et le poisson passes trois jours puent.
Le mort n'ha point d'amis, Le malade et l'absent
qu'vn demye.
II est tost trompe qui mal ne pense.
La farine du diable s'en va moitie en son.
Qui prest a l'ami, perd an double.
C'est vn valett du diable, qui fait plus qu'on luy
command.
Il n'est horologe plus iust que le ventre.
Mere pitieuse, fille rigueuse
II commence bien a mourrir qui abandonne son desir.
Chien qui abaye de loin ne mord pas.
Achete maison faite, femme a faire
Le riche disne quand il veut, le poure quand il peut.
Bien part de sa place qui son amy y lesse.
Il n'y a melieur mirroir que le vieil amy.

Amour fait beaucoup, mais l'argent fait tout.
L'amour la tousse et la galle ne se peuvent celer.
Amour fait rage, mais l'argent fait marriage.
Ma chemise blanche, baise mon cul tous les dimanches.
Mieux vaut vn tenes, que deux fois l'aurez.
Craindre ce qu'on peut vaincre, est vn bas courage.
A folle demande il ne faut point de responce.

Folio 130, front — continued.

Qui manie ses propres affaires, ne souille point se mains.
Argent receu les bras rompus.
Vn amoreux fait touiours quelque chose folastre.
Le povre qui donne au riche demande
Six heures dort l'escholier, sept y'e voyager, huict y'e vigneron, et neuf en demand le poltron.
La guerre fait les larrons et la paix les meine au gibbett
Au prester couzin germaine, au rendre fils de putaine
Qui n'ha point du miel en sa cruche, qu'il en aye en sa bouche.
Langage de Hauts bonnetts.
Les paroles du soir ne sembles a celles du matin.
Qui a bon voisin a bon matin.
Estre en la paille jusque an ventre.
Il faut prendre le temps comme il est, et les gens comme ils sont.
Il n'est Tresor que de vivre a son aise.
La langue n'a point d'os, et casse poitrine et dos.

Quand la fille pese vn auque, ou luy peut mettre
la coque.
Il en tuera dix de la chandelle, et vingt du chandelier.

Folio 130, back.

Qui seme de Chardons recuielle des espines
Il n'est chasse que de vieux levriers.
Qui trop se haste en beau chemin se fourvoye.
Il ne choisit pas qui emprunt.
Ostez vn vilain an gibett, il vous y mettra.
Son habit feroit peur an voleur.
J'employerai verd et sec.
Tost attrappe est le souris, qui n'a pour tout qu'vn
pertuis.
Le froid est si apre, qu'il me fait battre le tambour
avec les dents.
Homme de deux visages, n'aggree en ville ny en
villages.
Perdre la volee pour le bound.
Homme roux et femme barbue de cinquante pas
les salue.
Quand beau vient sur beau il perd sa beaute.
Les biens de la fortune passe comme la lune.
Ville qui parle, femme qui escoute, I'vne se prend,
lautre se foute.
Coudre le peau du renard, a celle du lyon.
Il a la conscience large comme la manche d'vn
cordelier.
Brusler la chandelle par les deux bouts.
Bon bastard c'est d'avanture, meschant c'est la

nature.
Argent content portent medecine.
Bonne renommee vaut plus que cincture doree.

Folio 130, back — continued.

Fille qui prend, se vend; fille qui donne s'abban-
donne.
Fais ce que tu dois, avien que pourra.
Il est tost deceu qui mal ne pense.
Vos finesses sont cousues de fil blanc, elles sont trop
apparentes.
Assez demand qui se plaint.
Assez demand qui bien sert.
Il ne demeure pas trop qui vient a la fin.
Secrett de dieux, secrett de dieux
Ton fils repeu et mal vestu, ta fille vestue et mal
repue.
Du dire an fait il y a vn grand trait.
Courtesye tardive est discourtesye.
Femme se plaint, femme se deult, femme est
malade quand elle veut —
Et par Madame *Ste.* Marie, quand elle veut, elle est
guerrye.
Quie est loin du plat, est prez de son dommage.
Le Diable estoit alors en son grammaire.
Il a vn quartier de la lune en sa teste.
Homme de paille vaut vne femme d'or.
Amour de femme, feu d'estoupe.
Fille brunette gaye et nette

Renard qui dort la mattinee, n'a pas la langue
emplumee.

Folio 131, front.

Tout est perdu qu'on donne au fol.
Bonnes paroles n'escorche pas la langue.
Pour durer il faut endurer
Qui veut prendre vn oiseau, qu'il ne l'effarouche.
Soleil qui luise au matin, femme qui parle latin,
enfant nourri du vin ne vient point a bonne fin.
Il peut hardiment heurter a la porte, qui bonnes
novelles apporte.
A bon entendeur ne faut que demy mot.
Qui fol envoye fol attend.
La faim chaisse le loup hors du bois.
Qui pen se prize, Dieu l'advise.
En pont, en planche, en riviere, valett devant,
maistre arriere.
L'oeil du maistre engraisse le chevall.
Qui mal entend, mal respond.
Mal pense qui ne repense.
Mal fait qui ne pairfait.
Si tous les fols portoient marrottes, on ne scauroit
pas de quell bois se chaufer
Mieux vaut en paix vn oeuf, qu'en guerre vn boeuf.
Couper l'herbe sous les pieds.
Toutes les heures ne sont pas meures.
Qui vit a compte, vit a honte.
Meschante parole jettee, va par toute alia volee.
Amour se nourrit de ieune chaire

Innocence porte avec soy sa deffence.
Il ne regard plus loin que le bout de son nez.
A paroles lourdes, aureilles sourdes.

Folio 131, front — continued

Ce n'est pas Evangile, qu'on dit parmi la ville.
Qui n'a patience n'a rien.
De mauvais payeur, foin ou paille
En fin les renards se troue chez le pelletier.
Qui prest a l'ami perd an double
Chantez a l'asne il vous fera de petz
Mieux vault glisser du pied, que de la langue.
Tout vient a point a chi peut attendre.
Il n'est pas si fol qu'il en porte l'habit.
Il est plus fol, qui a fol sens demand.
Nul n'a trop de sens, n'y d'argent.
En seurte dort qui n'a que perdre.
Le trou trop overt sous le nez fait porter soulier dechirez.
A laver la teste d'vn Asne, on ne perd que le temps et la lexive.
Chi choppe et ne tombe pas adiouste a ces pas.

Folio 131, back.

Amour, toux et fumee, en secrett ne sont demeuree.
Il a pour chaque trou vne cheville,
Il n'est vie que d'estre content.
Si tu veux cognoistre villain, baille luy la baggette en main.
Le boeuf sale, fait trover le vin sans chandelle.

Le sage va toujours la sonde a la main.
Qui se couche avec les chiens, se leve avec de puces.
A tous oiseaux leur nids sont beaux
Ovrage de commune, ovrage de nul.
Oy, voi, et te tais, si tu veux vivre en paix.
Rouge visage et grosse panche, ne sont signes de penitence.
A celuy qui a son paste an four, on peut donner de son tourteau.
Au serviteur le morceau d'honneur.
Pierre qui se remue n'accuille point de mousse
Necessite fait trotter la vieille.
Nourriture passe nature.
La mort n'espargne ny Roy ny Roc.
En mangeant l' appetit vient.
Table sans sel, bouche sans salive
Les maladyes vient a cheval, et s'en returne a pieds.
Tenez chauds le pied et la teste, an demeurant vivez en beste.
Faillir est vne chose humaine, se repentir divine, perseverer diabolique.
Fourmage est sain qui vient de ciche main.

Folio 131, back — continued.

Si tu veux engraisser promptement, mangez avec faim, bois a loisir et lentement.
A l'an soixante et douse, temps est qu'on se house.
Vin sur laict c'est souhait, lait sur vin c'est venin
Faim fait disner passetemps souper.
Le maux terminans en ique, font an medecine la

nique.
Au morceau restiffe esperon de vin.
Vn oeuf n'est rien, deux font grand bien, trois c'est assez, quattre c'est fort, cinque c'est la mort.
Apres les poire le vin ou le prestre
Qui a la sante est riche et ne le scait pas.
A la trogne on cognoist l'yvrogne.
Le fouriere de la lune a marque le logis.
Vne pillule fromentine, vne dragme sermentine, et la balbe[32] d'vne galline est vne bonne medecine.
Il faut plus tost prendre garde avec qui tu bois et mange, qu'a ce que tu bois et mange.
Qui tout mange le soir, le lendemain rogne son pain noir
Vin vieux, amy vieux, et or vieux sont amez en tous lieux.

*

Folio 132, front.

Qui veut vivre sain, disne pen et soupe moins.
Lever a six, manger a dix, souper a six, coucher a dix, font l'homme vivre dix fois dix.
De tous poissons fors que la tenche, prenez les dos, lessez le ventre.
Qui couche avec la soif, se leve avec la sante.
Amour de garze et saut de chien, ne dure si l'on ne dit tien.
Il en est plus assotte qu'vn fol de sa marotte.
Qui fol envoye fol attende.

Pennache de boeuf.
Vn Espagnol sans Jesuite est comme perdis sans orange.
C'est la maison de Robin de la vallee, ou il y a ny pott an feu, ny escuelle lavee.
Celuy gouverne bien mal le miel qui n'en taste.
Auiourdhuy facteur, demaine fracteur.
II est crotte en Archidiacre.
Apres trois jours on s'ennuy, de femme, d'hoste, et de pluye.
Il n'est pas eschappe qui son lien traine.
En la terre des aveugles, le borgne est Roy.
Il faut que la faim soit bien grande, quand les loups mange l'vn l'autre.
Il n'est[33] faut qu'vne mouche luy passe, par devant le nez, pour le facher.
La femme est bien malade, quand elle ne se peut tenir sur le dos.

*

Folio 132, front — continued.

Il n'a pas bien assise ses lunettes.
Cette flesche n'est pas sorti de son carquois.
L'affaire vas a quattre roues
Merchand d'allumettes
C'est vn marchand qui prend l'argent sans center ou peser.
Je vous payeray en monnoye de cordelier.
Vous avez mis le doit dessus.

S’embarquer sans bisquit.
Coucher a l’enseigne de l’estoile
On n’y trove ny trie ny troc.
Cecy n’est pas de mon gibier.
Joyeux comme sourris en graine
Il a beaucoup de grillons en la teste.
Elle a son Cardinall
Il est fourni du fil et d’esguille.
Chevalier de Corneuaille.
Angleterre le Paradis de femmes, le pourgatoire de valetts, l’enfer de chevaux.
Le mal An entre en nageant.
Qui a la fievre an Mois de May, le rest de l’an vit sain et gay.
Fol a vint cinque carrattes
Celuy a bon gage du Chatte qui en tient la peau.
Il entend autant comme truye en espices
Nul soulas humaine sans helas
In (*sic*) n’est pas en seurete qui ne mescheut onques.

Folio 133, front.

[Blank]

Folio 133, back.

Some choice Frensh Prover[bs.]

ENDNOTES.

[1] Digges really means “When Time dissolves thy Stratford Mask”.

[2] Through the whole play the fact that Puntarvolo represents Bacon is continually apparent to the instructed reader. Note especially Act II., Scene 3, where Puntarvolo addresses his wife, who appears at a window, in a parody of the address of Romeo to Juliet. Again in Act II., Scene 3, Carlo Buffone calls Puntarvolo "A yeoman pheuterer." Pheuter or feuter means a rest or supportfor a spear — which is informing.

[3] This fact so puzzling to Halliwell-Phillipps is fully explained when it is realised that William Shackspere of Stratford could neither read or write.

[4] The words attriuted to Apollo, are of course spoken by his Chancellor Bacon. See note on the number 33 on page 112.

[5] While I am perfectly satisfied that the above explanation of the meaning of the expression "All numbers" is the correct one; I am not unaware that at the date at which the Discoveries appeared "All numbers" would be generally understood in its classical sense; Jonson of course not being permitted to speak too plainly. He was foreman of Bacon's good pens and one of his "left-hands"; as any visitor to Westminster Abbey may learn, the attendants there being careful to point out that the sculptor has "accidentally" clothed Jonson's Bust in a left-handed coat. (With respect to the meaning of this the reader is referred to Plate 33, page 131.) Thus far was written and in print when the writer's attention was called to the Rev. George O Neill's little brochure, "Could Bacon have written the plays?" in which in a note to page 14 we find "Numeri" in Latin, "numbers" in English, applied to literature mean nothing else than verse, and even seem to exclude prose. Thus Tibullus writes, "*Numeris ille hic pede libero scribit*" (one writes in verse another in prose), and Shakespeare has the same antithesis in "Love's Labour Lost" (iv., 3), "These numbers I will tear and write in prose." Yet all this does not settle the matter, for "Numeri" is also used in the sense merely of "parts". Pliny speaks of a prose work as perfect in all its parts, "*Omnibus numeris absolutus*," and Cicero says of a plan of life, "*Omnes numeros virtutis continet*" (it contains every element of virtue). So that Jonson may have merely meant to say in slightly pedantic phrase that Bacon had passed away all parts fulfilled.

[6] Under what is now known as "Rask's law" the Roman F becomes B in the Teutonic languages: fero, bear; frater, brother; feru, brew; flo, blow, etc., etc., shewing that the Roman F was by no means really a mute.

[7] See Page 104.

[8] The number 33 too obviously represented Bacon, and therefore 53 which spells sow (S 18, O 14, W 21 = 53) was substituted for 33. Scores of examples can be found where on page 53 some reference is made to Bacon in books published under various names, especially in the Emblem Books. In many cases page 55 is *misprinted* as 53. In the Shakespeare Folio 1623 on the first page 53 we read "Hang Hog is latten for Bacon," and on the second page 53 we find "Gammon of Bacon." When the seven extra plays were added in thethird folio 1664 in each of the two new pages 53 appears "St. Albans." In the fifth edition, published by Kowe in 1709, on page 53 we read "deeper than did ever Plummet sound I'll drown my Book"; and on page 55 *misprinted* 53 (the only mispagination in the whole book of 3324 pages) we find "I do … require

My Dukedom of thee, which perforce I know Thou must restore." In Bacon's "Advancement of Learning," first English edition, 1640, on page 55 *misprinted* 53 in the margin in capital letters (the only name in capital letters in the whole book) we read "BACON." In Florio's "Second Frutes," 1591, on page 53, is "slice of bacon" and also "gammon of bakon," to shew that Bacon may be misspelled as it is in Drayton's "Polyolbion," 1622, where on page 53 we find *Becanus*. A whole book could be filled with similar instances.

[9] About A.D. 1300 benefit of clergy was extended to all males who could read. In 1487 it was enacted that mere laymen should have the benefit only once and should be branded on the thumb to shew they had once had it. *Whimsies*, 1623, p. 69, tells us: "If a prisoner, by help of a compassionate prompter, hack out his neck verse (Psalm li. *v*. i in Latin) and be admitted to his clergy, the jailors have a cold iron in store if his purse be hot, but if not, a hot iron that his fist may *Fiz*." Benefit of clergy was not totally abolished till 1827.

[10] In 1599 Sir John Hayward, LL.D., brought out "The Life and raigne of King Henrie IIII extending to the end of the first yeare of his raigne." This little book contains an account of the trial of Richard II., and was dedicated to the Earl of Essex in very encomiastic terms. It irritated Queen Elizabeth in the highest degree, and she clapped Hayward into prison and employed Sir Francis Bacon to search his book for treason. (Lowndes, Bohn, p. 1018). The story carefully read reveals the fact that it was really the play rather than the book which enraged Queen Elizabeth.

[11] The appearance of Shakespeare's name in the list of Actors in Ben Jonson's plays and in the plays known as Shakespeare's was, of course, part of the plot to place Shakespeare's name in a prominent position while the pseudonym had to be preserved.

[12] Facsimiles of law clerks' writing of the name "John Shakespeare," are given in Plate 40, Page 169. They are taken from Halliwell-Phillipps' "Outlines of the Life of Shakespeare," 1889, vol. 2, pp. 233 and 236. In the first two examples the name is written "Shakes," followed by an exactly similar scroll and dash to complete the name. In Saunders' "Ancient Handwriting," 1909, page 24, we are shown that such a "scroll and dash" represents "per" "par," and "por"; and in Wright's "Court Handwriting restored" we find that in the most perfectly formed script a "p" with a dash through the lower part similarly represented "per," "par," and "por," this is repeated in Thoyts' "How to decipher and study old documents," and the same information is given in numerous other works. There is therefore no possible excuse for Dr. Wallace's blundering.

[13] A facsimile example of the way in which the law clerk wrote "Shaxper" is shewn in the third line of Plate 40, Page 169, where it will be seen that the writer uses a similar "X".

[14] Holinshed's Chronicles (1557) state that "Montioy, king-at-arms, was sent to the King of England to defie him as the enemie of France, and to tell him that he should shortlie have battell." Moreover,

“Montioy” is not the personal name, but the official title of a Herald of France, just as “Norroy” is not a personal name, but the official title of one of the three chief Heralds of the College of Arms of England.

[15] He never was a manager.

[16] From the Introduction of “The Famous Historie of Troylus and Cresseid, by William Shakespeare,” 1609. This play as the above Introduction says was never acted.

[17] ‘well’ has been struck out.

[18] ‘Quin,’ this may be ‘quis.’

[19] This is difficult to read. It may be “faciunt et tedia funera.”

[20] This is difficult to read. It may be “fero danid es.”

[21] “Sedeant.” This word is doubtful. It may be “tedeant,” “te deum” is not an impossible reading.

[22] “Num” may by read as “Nunc.”

[23] “Validat” may be read “Validas”.

[24] “Swear,” this may be read “Sweat.”

[25] The side note “Direction generall” has been struck out in the MS.

[26] s. P. s. J. may be read s R s. f.

[27] “ante,” this may be read “aute” = “autem.” 2 “ipsa” this may be read “ipsu”— “ipsum”.

[28] “Timores” may be read “timoris”.

[29] “Institit” = insistit.

[30] “To frime (to Sp.” this line may read, “To trime) to Suse Sp.”

[31] [This is an endorsement across the page.]

[32] “balbe” may be read “balle.”

[33] For “Il n’est faut” may be read “Il n’en faut.”

Shakespeare, Bacon, and the Great Unknown by Andrew Lang

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PREFACE

It is with some hesitation that I give my husband's last book to the world. It was in type when he died, but he had no time to correct even the first proofs, and doubtless he would have made many changes, if not in his views at least in his expression of them. Mr. Bartram has verified the quotations and dates with infinite care, and for this he has my warmest thanks. For the rest I can but ask those who differ from the author to remember the circumstances in which the work has been published.

L. B. L.

INTRODUCTION

The theory that Francis Bacon was, in the main, the author of "Shakespeare's plays," has now been for fifty years before the learned world. Its advocates have met with less support than they had reason to expect. Their methods, their logic, and their hypotheses closely resemble those applied by many British and foreign scholars to Homer; and by critics of the very Highest School to Holy Writ. Yet the Baconian theory is universally rejected in England by the professors and historians of English literature; and generally by students who have no profession save that of Letters. The Baconians, however, do not lack the countenance and assistance of highly distinguished persons, whose names are famous where those of mere men of letters are unknown; and in circles where the title of "Professor" is not duly respected.

The partisans of Bacon aver (or one of them avers) that "Lord Penzance, Lord Beaconsfield, Lord Palmerston, Judge Webb, Judge Holmes (of Kentucky, U.S.), Prince Bismarck, John Bright, and innumerable most *thoughtful scholars eminent in many walks of life*, *and especially in the legal profession* . . . " have been Baconians, or, at least, opposed to Will Shakspere's authorship. To these names of scholars I must add that of my late friend, Samuel Clemens, D.Litt. of Oxford; better known to many as Mark Twain. Dr. Clemens was, indeed, no mean literary critic; witness his epoch-making study of Prof. Dowden's *Life of Shelley*, while his researches into the biography of Jeanne d'Arc were most conscientious.

With the deepest respect for the political wisdom and literary taste of Lord Palmerston, Prince Bismarck, Lord Beaconsfield, and the late Mr. John Bright; and with every desire to humble myself before the judicial verdicts of Judges Holmes, Webb, and Lord Penzance; with sincere admiration of my late friend, Dr. Clemens, I cannot regard them as, in the first place and professionally, trained students of literary history.

They were no more specially trained students of Elizabethan literature than myself; they were amateurs in this province, as I am an amateur, who differ from all of them in opinion. Difference of opinion concerning points of literary history ought not to make "our angry passions rise." Yet this controversy has been extremely bitter.

I abstain from quoting the "sweetmeats," in Captain MacTurk's phrase, which have been exchanged by the combatants. Charges of ignorance and monomania have been answered by charges of forgery, lying, "scandalous literary dishonesty," and even inaccuracy. Now no mortal is infallibly accurate, but we are all sane and "indifferent honest." There have been forgeries in matters Shakespearean, alas, but not in connection with the Baconian controversy.

It is an argument of the Baconians, and generally of the impugners of good Will's authorship of the plays vulgarly attributed to him, that the advocates of William Shakspere, Gent, as author of the plays, differ like the Kilkenny cats among themselves on many points. All do not believe, with Mr. J. C. Collins, that Will knew Sophocles, Euripides, and Æschylus (but not Aristophanes) as well as Mr. Swinburne did, or knew them at all — for that matter. Mr. Pollard differs very widely from Sir Sidney Lee on points concerning the First Folio and the Quartos: my sympathies are with Mr. Pollard. Few, if any, partisans of Will agree with Mrs. Stopes (herself no Baconian) about the history of the Stratford monument of the poet. About Will's authorship of *Titus Andronicus*, and *Henry VI*, Part I, the friends of Will, like the friends of Bacon, are at odds among themselves. These and other divergencies of opinion cause the Baconians to laugh, as if *they* were a harmonious circle . . . ! For the Baconian camp is not less divided against itself than the camp of the "Stratfordians." Not all Baconians hold that Bacon was the legitimate son of "that Imperial otaress" Queen Elizabeth. Not all believe in the Cryptogram of Mr. Ignatius Donnelly, or in any other cryptograms. Not all maintain that Bacon, in the Sonnets, was inspired by a passion for the Earl of Essex, for Queen Elizabeth, or for an early miniature of himself. Not all regard him as the author of the plays of Kit Marlowe. Not all suppose him to be a Rosicrucian, who possibly died at the age

of a hundred and six, or, perhaps, may be "still running." Not all aver that he wrote thirteen plays before 1593. But one party holds that, in the main, Will was the author of the plays, while the other party votes for Bacon — or for Bungay, a Great Unknown. I use Bungay as an endearing term for the mysterious being who was the Author if Francis Bacon was not. Friar Bungay was the rival of Friar Bacon, as the Unknown (if he was not Francis Bacon) is the rival of "the inventor of Inductive reasoning."

I could never have expected that I should take a part in this controversy; but acquaintance with *The Shakespeare Problem Restated* (503 pp.), (1908), and later works of Mr. G. G. Greenwood, M.P., has tempted me to enter the lists.

Mr. Greenwood is worth fighting; he is cunning of fence, is learned (and I cannot conceal my opinion that Mr. Donnelly and Judge Holmes were rather ignorant). He is not over "the threshold of Eld" (as were Judge Webb and Lord Penzance when they took up Shakespearean criticism). His knowledge of Elizabethan literature is vastly superior to mine, for I speak merely, in Matthew Arnold's words, as "a belletristic trifler."

Moreover, Mr. Greenwood, as a practising barrister, is a judge of legal evidence; and, being a man of sense, does not "hold a brief for Bacon" as the author of the Shakespearean plays and poems, and does not value Baconian cryptograms. In the following chapters I make endeavours, conscientious if fallible, to state the theory of Mr. Greenwood. It is a negative theory. He denies that Will Shakspere (or Shaxbere, or Shagspur, and so on) was the author of the plays and poems. Some other party was, *in the main*, with other hands, the author. Mr. Greenwood cannot, or does not, offer a guess as to who this ingenious Somebody was. He does not affirm, and he does not deny, that Bacon had a share, greater or less, in the undertaking.

In my brief tractate I have not room to consider every argument; to traverse every field. In philology I am all unlearned, and cannot pretend to discuss the language of Shakespeare, any more than I can analyse the language of Homer into proto-Arcadian and Cyprian, and so on. Again, I cannot pretend to have an opinion, based on internal evidence, about the genuine Shakespearean character

of such plays as *Titus Andronicus*, *Henry VI*, Part I, and *Troilus and Cressida*. About them different views are held *within* both camps.

I am no lawyer or naturalist (as Partridge said, *Non omnia possumus omnes*), and cannot imagine why our Author is so accurate in his frequent use of terms of law — if he be Will; and so totally at sea in natural history — if he be Francis, who "took all knowledge for his province."

How can a layman pretend to deal with Shakespeare's legal attainments, after he has read the work of the learned Recorder of Bristol, Mr. Castle, K.C.? To his legal mind it seems that in some of Will's plays he had the aid of an expert in law, and then his technicalities were correct. In other plays he had no such tutor, and then he was sadly to seek in his legal jargon. I understand Mr. Greenwood to disagree on this point. Mr. Castle says, "I think Shakespeare would have had no difficulty in getting aid from several sources. There is therefore no *prima facie* reason why we should suppose the information was supplied by Bacon."

Of course there is not!

"In fact, there are some reasons why one should attribute the legal assistance, say, to Coke, rather than to Bacon."

The truth is, that Bacon seems not to have been lawyer enough for Will's purposes. "We have no reason to believe that Bacon was particularly well read in the technicalities of our law; he never seems to have seriously followed his profession."

Now we have Mr. Greenwood's testimonial in favour of Mr. Castle, "Who really does know something about law." Mr. Castle thinks that Bacon really did not know enough about law, and suggests Sir Edward Coke, of all human beings, as conceivably Will's "coach" on legal technicalities. Perhaps Will consulted the Archbishop of Canterbury on theological niceties?

Que sçais je? In some plays, says Mr. Castle, Will's law is all right, in other plays it is all wrong. As to Will's law, when Mr. Greenwood and Mr. Castle differ, a layman dare not intervene.

Concerning legend and tradition about our Will, it seems that, in each case, we should do our best to trace the *Quellen*, to discover the original sources, and

the steps by which the tale arrived at its late recorders in print; and then each man's view as to the veracity of the story will rest on his sense of probability; and on his bias, his wish to believe or to disbelieve.

There exists, I believe, only one personal anecdote of Will, the actor, and on it the Baconians base an argument against the contemporary recognition of him as a dramatic author. I take the criticism of Mr. Greenwood (who is not a Baconian). One John Manningham, Barrister-at-Law, "a well-educated and cultured man," notes in his Diary (February 2, 1601) that "at our feast we had a play called Twelve Night or What you Will, much like the Comedy of Errors, or Menæchmi n Plautus, but most like and near to that in Italian called *Inganni*." He confides to his Diary the tricks played on Malvolio as "a good practice." That is all.

About the authorship he says nothing: perhaps he neither knew nor cared who the author was. In our day the majority of people who tell me about a play which they have seen, cannot tell me the name of the author. Yet it is usually printed on the playbill, though in modest type. The public does not care a straw about the author's name, unless he be deservedly famous for writing letters to the newspapers on things in general; for his genius as an orator; his enthusiasm as a moralist, or in any other extraneous way. Dr. Forman in his queer account of the plot of "Mack Beth" does not allude to the name of the author (April 20, 1610). *Twelfth Night* was not published till 1623, in the Folio: there was no quarto to enlighten Manningham about the author's name. We do not hear of printed playbills, with author's names inserted, at that period. It seems probable that occasional playgoers knew and cared no more about authors than they do at present. The world of the wits, the critics (such as Francis Meres), poets, playwrights, and players, did know and care about the authors; apparently Manningham did not. But he heard a piquant anecdote of two players and (March 13, 1601) inserted it in his Diary.

Shakespeare once anticipated Richard Burbage at an amorous tryst with a citizen's wife. Burbage had, by the way, been playing the part of Richard III. While Will was engaged in illicit dalliance, the message was brought (what a

moment for bringing messages!) that Richard III was at the door, and Will "caused return to be made that William the Conqueror was before Richard III. *Shakespeare's name William*." (My italics.) Mr. Greenwood argues that if "Shakspere the player was known to the world as the author of the plays of Shakespeare, it does seem extremely remarkable" that Manningham should have thought it needful to add "Shakespeare's name William."

But *was* "Shakspere," or any man, "known to the world as the author of the plays of Shakespeare"? No! for Mr. Greenwood writes, "nobody, outside a very small circle, troubled his head as to who the dramatist or dramatists might be." To that "very small circle" we have no reason to suppose that Manningham belonged, despite his remarkable opinion that *Twelfth Night* resembles the *Menæchmi*. Consequently, it is *not* "extremely remarkable" that Manningham wrote "Shakespeare's name William," to explain to posterity the joke about "William the Conqueror," instead of saying, "the brilliant author of the Twelfth Night play which so much amused me at our feast a few weeks ago." "Remarkable" out of all hooping it would have been had Manningham written in the style of Mr. Greenwood. But Manningham apparently did not "trouble his head as to who the dramatist or dramatists might be." "Nobody, outside a very small circle," *did* trouble his poor head about that point. Yet Mr. Greenwood thinks "it does seem extremely remarkable" that Manningham did not mention the author.

Later, on the publication of the Folio (1623), the world seems to have taken more interest in literary matters. Mr. Greenwood says that then while "the multitude" would take Ben Jonson's noble panegyric on Shakespeare as a poet "*au pied de la lettre*," "the enlightened few would recognise that it had an esoteric meaning." Then, it seems, "the world" — the "multitude" — regarded the actor as the author. Only "the enlightened few" were aware that when Ben *said* "Shakespeare," and "Swan of Avon," he *meant* — somebody else.

Quite different inferences are drawn from the same facts by persons of different mental conditions. For example, in 1635 or 1636, Cuthbert Burbage, brother of Richard, the famous actor, Will's comrade, petitioned Lord Pembroke,

then Lord Chamberlain, for consideration in a quarrel about certain theatres. Telling the history of the houses, he mentions that the Burbages "to ourselves joined those deserving men, Shakspere, Heminge, Condell, Phillips and others." Cuthbert is arguing his case solely from the point of the original owners or lease-holders of the houses, and of the well-known actors to whom they joined themselves. Judge Webb and Mr. Greenwood think that "it does indeed seem strange . . . that the proprietor[s] of the playhouses which had been made famous by the production of the Shakespearean plays, should, in 1635 — twelve years after the publication of the great Folio — describe their reputed author to the survivor of the Incomparable Pair, as merely a 'man-player' and 'a deserving man.'" Why did he not remind the Lord Chamberlain that this "deserving man" was the author of all these famous dramas? Was it because he was aware that the Earl of Pembroke "knew better than that"?

These arguments are regarded by some Baconians as proof positive of their case.

Cuthbert Burbage, in 1635 or 1636, did not remind the Earl of what the Earl knew very well, that the Folio had been dedicated, in 1623, to him and his brother, by Will's friends, Heminge and Condell, as they had been patrons of the late William Shakspere and admirers of his plays. The terms of this dedication are to be cited in the text, later. *We* all *now* would have reminded the Earl of what he very well knew. Cuthbert did not.

The intelligence of Cuthbert Burbage may be gauged by anyone who will read p–484 in *William Shakespeare*, *His Family and Friends*, by the late Mr. Charles Elton, Q.C., of White Staunton. Cuthbert was a puzzle-pated old boy. The silence as to Will's authorship on the part of this muddle-headed old Cuthbert, in 1635–36, cannot outweigh the explicit and positive public testimony to his authorship, signed by his friends and fellow-actors in 1623.

Men believe what they may; but I prefer positive evidence for the affirmative to negative evidence from silence, the silence of Cuthbert Burbage.

One may read through Mr. Greenwood's three books and note the engaging varieties of his views; they vary as suits his argument; but he is unaware of it, or

can justify his varyings. Thus, in 1610, one John Davies wrote rhymes in which he speaks of "our English Terence, Mr. Will Shakespeare"; "good Will." In his period patriotic English critics called a comic dramatist "the English Terence," or "the English Plautus," precisely as American critics used to call Mr. Bryant "the American Wordsworth," or Cooper "the American Scott"; and as Scots called the Rev. Mr. Thomson "the Scottish Turner." Somewhere, I believe, exists "the Belgian Shakespeare."

Following this practice, Davies had to call Will either "our English Terence," or "our English Plautus." Aristophanes would not have been generally recognised; and Will was no more like one of these ancient authors than another. Thus Davies was apt to choose either Plautus or Terence; it was even betting which he selected. But he chanced to choose Terence; and this is "curious," and suggests suspicions to Mr. Greenwood — and the Baconians. They are so very full of suspicions!

It does not suit the Baconians, or Mr. Greenwood, to find contemporary recognition of Will as an author. Consequently, Mr. Greenwood finds Davies's "curious, and at first sight, inappropriate comparison of 'Shakespeare' to Terence worthy of remark, for Terence is the very author whose name is alleged to have been used as a mask-name, or *nom de plume*, for the writings of great men who wished to keep the fact of their authorship concealed."

Now Davies felt bound to bring in *some* Roman parallel to Shakespeare; and had only the choice of Terence or Plautus. Meres (1598) used Plautus; Davies used Terence. Mr. Greenwood shows us that Plautus would not do. "Could *he*" (Shakespeare) "write only of courtesans and *cocottes*, and not of ladies highly born, cultured, and refined? . . ."

"The supposed parallel" (Plautus and Shakespeare) "breaks down at every point." Thus, on Mr. Greenwood's showing, Plautus could not serve Davies, or should not serve him, in his search for a Roman parallel to "good Will." But Mr. Greenwood also writes, "if he" (Shakespeare) "was to be likened to a Latin comedian, surely Plautus is the writer with whom he should have been compared." Yet Plautus was the very man who cannot be used as a parallel to

Shakespeare. Of course no Roman nor any other comic dramatist closely resembles the *author* of *As You Like It*. They who selected either Plautus or Terence meant no more than that both were celebrated comic dramatists. Plautus was no parallel to Will. Yet "surely Plautus is the author to whom he should have been compared" by Davies, says Mr. Greenwood. If Davies tried Plautus, the comparison was bad; if Terence, it was "curious," as Terence was absurdly accused of being the "*nom de plume*" of some great "concealed poets" of Rome. "From all the known facts about Terence," says a Baconian critic (who has consulted Smith's *Biographical Dictionary*), "it is an almost unavoidable inference that John Davies made the comparison to Shakspere because he knew of the point common to both cases." The common point is taken to be, not that both men were famous comic dramatists, but that Roman literary gossips said, and that Baconians and Mr. Greenwood say, that "Terence" was said to be a "mask-name," and that "Shakespeare" s a mask-name. Of the second opinion there is not a hint in literature of the time of good Will.

What surprises one most in this controversy is that men eminent in the legal profession should be "anti-Shakesperean," if not overtly Baconian. For the evidence for the contemporary faith in Will's authorship is all positive; from his own age comes not a whisper of doubt, not even a murmur of surprise. It is incredible to me that his fellow-actors and fellow-playwrights should have been deceived, especially when they were such men as Ben Jonson and Tom Heywood. One would expect lawyers, of all people, to have been most impatient of the surprising attempts made to explain away Ben Jonson's testimony, by aid, first, of quite a false analogy (Scott's denial of his own authorship of his novels), and, secondly, by the suppression of such a familiar fact as the constant inconsistency of Ben's judgments of his contemporaries in literature. Mr. Greenwood must have forgotten the many examples of this inconsistency; but I have met a Baconian author who knew nothing of the fact. Mr. Greenwood, it is proper to say, does not seem to be satisfied that he has solved what he calls "the Jonsonian riddle." Really, there is no riddle. About Will, as about other authors, his contemporaries and even his friends, on

occasion, Ben "spoke with two voices," now in terms of hyperbolical praise, now in carping tones of censure. That is the obvious solution of "the Jonsonian riddle."

I must apologise if I have in places spelled the name of the Swan of Avon "Shakespeare" where Mr. Greenwood would write "Shakspere," and *vice versa*. He uses "Shakespeare" where he means the Author; "Shakspere" where he means Will; and is vexed with some people who write the name of Will as "Shakespeare." As Will, in the opinion of a considerable portion of the human race, and of myself, *was* the Author, one is apt to write his name as "Shakespeare" in the usual way. But difficult cases occur, as in quotations, and in conditional sentences. By any spelling of the name I always mean the undivided personality of "Him who sleeps by Avon."

I. THE BACONIAN AND ANTI-WILLIAN POSITIONS

Till the years 1856–7 no voice was raised against the current belief about Shakespeare (1564–1616). He was the author in the main of the plays usually printed as his. In some cases other authors, one or more, may have had fingers in his dramas; in other cases, Shakespeare may have "written over" and transfigured earlier plays, of himself and of others; he may have contributed, more or less, to several plays mainly by other men. Separately printed dramas published during his time carry his name on their title-pages, but are not included in the first collected edition of his dramas, "The First Folio," put forth by two of his friends and fellow-actors, in 1623, seven years after his death.

On all these matters did commentators, critics, and antiquarians for long dispute; but none denied that the actor, Will Shakspere (spelled as heaven pleased), was in the main the author of most of the plays of 1623, and the sole author of *Venus and Adonis*, *Lucrece*, and the Sonnets.

Even now, in England at least, it would be perhaps impossible to find one special and professed student of Elizabethan literature, and of the classical and European literatures, who does not hold by the ancient belief, the belief of Shakespeare's contemporaries and intimates, the belief that he was, in the sense explained above, the author of the plays.

But ours is not a generation to be overawed by "Authority" (as it is called). A small but eager company of scholars have convinced themselves that Francis Bacon wrote the Shakespearean plays. That is the point of agreement among these enthusiasts: points of difference are numerous: some very wild little sects exist. Meanwhile multitudes of earnest and intelligent men and women, having read notices in newspapers of the Baconian books, or heard of them at lectures and tea-parties, disbelieve in the authorship of "the Stratford rustic," and look down on the faithful of Will Shakespere with extreme contempt.

From the Baconians we receive a plain straightforward theory, "Bacon wrote Shakespeare," as one of their own prophets has said. Since we have plenty of evidence for Bacon's life and occupations during the period of Shakespearean poetic activity, we can compare what he was doing as a man, a student, a Crown lawyer, a pleader in the Courts, a political pamphleteer, essayist, courtier, active member of Parliament, and so on, with what he is said to have been doing — by the Baconians; namely, writing two dramas yearly.

But there is another "Anti-Willian" theory, which would dethrone Will Shakspere, and put but a Shadow in his place. Conceive a "concealed poet," of high social position, contemporary with Bacon and Shakespeare. Let him be so fond of the Law that he cannot keep legal "shop" out of his love Sonnets even. Make him a courtier; a statesman; a philosopher; a scholar who does not blench even from the difficult Latin of Ovid and Plautus. Let this almost omniscient being possess supreme poetic genius, extensive classical attainments, and a tendency to make false quantities. Then conceive him to live through the reigns of "Eliza and our James," without leaving in history, in science, in society, in law, in politics or scholarship, a single trace of his existence. He left nothing but the poems and plays usually attributed to Will. As to the date of his decease, we only know that it must necessarily have been later than the composition of the last genuine Shakespearean play — for this paragon wrote it.

Such is the Being who occupies, in the theory of the non-Baconian, *but not Anti-Baconian*, Anti-Willians, the intellectual throne filled, in the Will Shakespeare theory, by Will; and in the Baconian, by Bacon — two kings of Brentford on one throne.

We are to be much engaged by the form of this theory which is held by Mr. G. G. Greenwood in his *The Shakespeare Problem Restated*. In attempting to explain what he means I feel that I am skating on very thin ice. Already, in two volumes (*In Re Shakespeare*, 1909, and *The Vindicators of Shakespeare*), Mr. Greenwood has accused his critics of frequently misconceiving and misrepresenting his ideas: wherefore I also tremble. I am perfectly confident in saying that he "holds no brief for the Baconians." He is *not* a Baconian. His

position is negative merely: Will of Stratford is *not* the author of the Shakespearean plays and poems. Then who is? Mr. Greenwood believes that work by an unknown number of hands exists in the plays first published all together in 1623. Here few will differ from him. But, setting aside this aspect of the case, Mr. Greenwood appears to me to believe in an entity named "Shakespeare," or "the Author," who is the predominating partner; though Mr. Greenwood does not credit him with all the plays in the Folio of 1623 (nor, perhaps, with the absolute entirety of any given play). "The Author" or "Shakespeare" is not a syndicate (like the Homer of many critics), but an individual human being, apparently of the male sex. As to the name by which he was called on earth, Mr. Greenwood is "agnostic." He himself is not Anti-Baconian. He does not oust Bacon and put the Unknown in his place. He neither affirms nor denies that Bacon may have contributed, more or less, to the bulk of Shakespearean work. To put it briefly: Mr. Greenwood backs the field against the favourite (our Will), and Bacon *may* be in the field. If he has any part in the whole I suspect that it is "the lion's part," but Mr. Greenwood does not commit himself to anything positive. We shall find (if I am not mistaken) that Mr. Greenwood regards the hypothesis of the Baconians as "an extremely reasonable one," and that for his purposes it would be an extremely serviceable one, if not even essential. For as Bacon was a genius to whose potentialities one can set no limit, he is something to stand by, whereas we cannot easily believe — I cannot believe — that the actual "Author," the "Shakespeare" lived and died and left no trace of his existence except his share in the works called Shakespearean.

However, the idea of the Great Unknown has, for its partisans, this advantage, that as the life of the august Shade is wholly unknown, we cannot, as in Bacon's case, show how he was occupied while the plays were being composed. He *must*, however, have been much at Court, we learn, and deep in the mysteries of legal terminology. Was he Sir Edward Coke? Was he James VI and I?

It is hard, indeed, to set forth the views of the Baconians and of the "Anti-Willians" in a shape which will satisfy them. The task, especially when

undertaken by an unsympathetic person, is perhaps impossible. I can only summarise their views in my own words as far as I presume to understand them. I conceive the Baconians to cry that "the world possesses a mass of transcendent literature, attributed to a man named William *Shakespeare*." Of a man named William *Shakspere* (there are many varieties of spelling) we certainly know that he was born (1564) and bred in Stratford-on-Avon, a peculiarly dirty, stagnant, and ignorant country town. There is absolutely no evidence that he (or any Stratford boy of his standing) ever went to Stratford school. His father, his mother, and his daughter could not write, but, in signing, made their marks; and if he could write, which some of us deny, he wrote a terribly bad hand. As far as late traditions of seventy or eighty years after his death inform us, he was a butcher's apprentice; and also a schoolmaster "who knew Latin pretty well"; and a poacher. He made, before he was nineteen, a marriage tainted with what Meg Dods calls "ante-nup." He early had three children, whom he deserted, as he deserted his wife. He came to London, we do not know when (about 1582, according to the "guess" of an antiquary of 1680); held horses at the door of a theatre (so tradition says), was promoted to the rank of "servitor" (whatever that may mean), became an actor (a vagabond under the Act), and by 1594 played before Queen Elizabeth. He put money in his pocket (heaven knows how), for by 1597 he was bargaining for the best house in his native *bourgade*. He obtained, by nefarious genealogical falsehoods (too common, alas, in heraldry), the right to bear arms; and went on acting. In 1610–11 (?) he retired to his native place. He never took any interest in his unprinted manuscript plays; though rapacious, he never troubled himself about his valuable copyrights; never dreamed of making a collected edition of his works. He died in 1616, probably of drink taken. Legal documents prove him to have been a lender of small sums, an avid creditor, a would-be encloser of commons. In his will he does not bequeath or mention any books, manuscripts, copyrights, and so forth. It is utterly incredible, then, that this man wrote the poems and plays, so rich in poetry, thought, scholarship, and knowledge, which are attributed to "William Shakespeare." These must be the works of "a concealed poet," a philosopher, a

courtier moving in the highest circles, a supreme legist, and, necessarily, a great poet, and student of the classics.

No known person of the age but one, Bacon, was a genius, a legist, a scholar, a great poet, and brilliant courtier, with all the other qualifications so the author of the plays either was Francis Bacon — or some person unknown, who was in all respects equally distinguished, but kept his light under a bushel. Consequently the name "William Shakespeare" is a pseudonym or "pen-name" wisely adopted by Bacon (or the other man) as early as 1593, at a time when William Shakspere was notoriously an actor in the company which produced the plays of the genius styling himself "William Shakespeare."

Let me repeat that, to the best of my powers of understanding and of expression, and in my own words, so as to misquote nobody, I have now summarised the views of the Baconians *sans phrase*, and of the more cautious or more credulous "Anti-Willians," as I may style the party who deny to Will the actor any share in the authorship of the plays, but do not overtly assign it to Francis Bacon.

Beyond all comparison the best work on the Anti-Willian side of the controversy is *The Shakespeare Problem Restated*, by Mr. G. G. Greenwood (see my Introduction). To this volume I turn for the exposition of the theory that "Will Shakspere" (with many other spellings) is an actor from the country — a man of very scanty education, in all probability, and wholly destitute of books; while "William Shakespeare," or with the hyphen, "Shakespeare," is a "*nom de plume*" adopted by the Great Unknown "concealed poet."

When I use the word "author" here, I understand Mr. Greenwood to mean that in the plays called "Shakespearean" there exists work from many pens: owing to the curious literary manners, methods, and ethics of dramatic writing in, say, 1589–1611. In my own poor opinion this is certainly true of several plays in the first collected edition, "The Folio," produced seven years after Will's death, namely in 1623. These curious "collective" methods of play-writing are to be considered later.

Matters become much more perplexing when we examine the theory that "William Shakespeare" (with or without the hyphen), on the title-pages of plays, or when signed to the dedications of poems, is the chosen pen-name, or "*nom de plume*," of Bacon or of the Unknown.

Here I must endeavour to summarise what Mr. Greenwood has written on the name of the actor, and the "*nom de plume*" of the unknown author who, by the theory, was not the actor. Let me first confess my firm belief that there is no cause for all the copious writing about the spellings "Shakespeare" or "Shakespeare" — as indicating the true but "concealed poet" — and "Shakspere" (&c.), as indicating the Warwickshire rustic. At Stratford and in Warwickshire the clan-name was spelled in scores of ways, was spelled in different ways within a single document. If the actor himself uniformly wrote "Shakspere" (it seems that we have but five signatures), he was accustomed to seeing the name spelled variously in documents concerning him and his affairs. In London the printers aimed at a kind of uniformity, "Shakespeare" or "Shakespeare": and even if he wrote his own name otherwise, to him it was indifferent. Lawyers and printers might choose their own mode of spelling — and there is no more in the matter.

I must now summarise briefly, in my own words, save where quotations are indicated in the usual way, the results of Mr. Greenwood's researches. "The family of William Shakspere of Stratford" (perhaps it were safer to say "the members of his name") "wrote their name in many different ways — some sixty, I believe, have been noted . . . but the form 'Shakespeare' seems never to have been employed by them"; and, according to Mr. Spedding, "Shakspere of Stratford never so wrote his name 'in any known case.'" (According to many Baconians he never wrote his name in his life.) On the other hand, the dedications of *Venus and Adonis* (1593) and of *Lucrece* (1594) are inscribed "William Shakespeare" (without the hyphen). In 1598, the title-page of *Love's Labour's Lost* "bore the name W. Shakespere," while in the same year *Richard II* and *Richard III* bear "William Shakespeare," with the hyphen (not without it, as in the two dedications by the Author). "The name which appears in the body

of the conveyance and of the mortgage bearing" (the actor's) "signature is 'Shakespeare,' while 'Shackspeare' appears in the will, prepared, as we must presume, by or under the directions of Francis Collyns, the Stratford solicitor, who was one of the witnesses thereto" (and received a legacy of £13, 6*s.* 8*d.*).

A

PLEASANT

Conceited Comedie

CALLED,

Loues labors loſt.

As it vvas preſented before her Highnes this laſt Chriſtmas.

Newly corrected and augmented *By W. Shakeſpere.*

Imprinted at London by *W.W.* for *Cutbert Burby.*

1598.

Thus, at Stratford even, the name was spelled, in legal papers, as it is spelled in the two dedications, and in most of the title-pages — and also is spelled otherwise, as "Shackspeare." In March 1594 the actor's name is spelled "Shakespeare" in Treasury accounts. The legal and the literary and Treasury spellings (and conveyances and mortgages and wills are *not* literature) are Shakespeare, Shackspeare, Shakespeare, Shakespere — all four are used, but we must regard the actor as never signing "Shakespeare" in any of these varieties of

spelling — if sign he ever did; at all events he is not known to have used the *a* in the last syllable.

I now give the essence of Mr. Greenwood's words concerning the *nom de plume* of the "concealed poet," whoever he was.

"And now a word upon the name 'Shakespeare.' That in this form, and more especially with a hyphen, Shakespeare, the word makes an excellent *nom de plume* is obvious. As old Thomas Fuller remarks, the name suggests *Martial* in its warlike sound, 'Hasti-vibrans or Shakespeare.' It is of course further suggestive of Pallas Minerva, the goddess of Wisdom, for Pallas also was a spear-shaker (Pallas ἀπὸ του πάλλειν τὸ δόρυ); and all will remember Ben Jonson's verses . . . " on Shakespeare's "true-filed lines" — "In each of which he seems to shake a lance,
As brandished at the eyes of ignorance."

There is more about Pallas in book-titles (to which additions can easily be made), and about "Jonson's Cri-spinus or Cri-spinas," but perhaps we have now the gist of Mr. Greenwood's remarks on the "excellent *nom de plume*" (*cf.* p–37. On the whole of this, *cf. The Shakespeare Problem Restated*, p–295; a *nom de plume* called a "pseudonym," p, 312; Shakespeare "a mask name," ; a "pseudonym," ; "*nom de plume*,").

Now why was the "*nom de plume*" or "pseudonym" "William Shakespeare" "an excellent *nom de plume*" for a concealed author, courtier, lawyer, scholar, and so forth? If "Shakespeare" suggested Pallas Athene, goddess of wisdom and of many other things, and so was appropriate, why add "William"?

In 1593, when the "pseudonym" first appears in *Venus and Adonis*, a country actor whose name, in legal documents — presumably drawn up by or for his friend, Francis Collyns at Stratford — is written "William Shakespeare," was before the town as an actor in the leading company, that of the Lord Chamberlain. This company produced the plays some of which, by 1598, bear "W. Shakespere," or "William Shakespeare" on their title-pages. Thus, even if the actor habitually spelled his name "Shakspere," "William Shakespeare" was, practically (on the Baconian theory), not only a pseudonym of one man, a poet,

but also the real name of another man, a well-known actor, who was *not* the "concealed poet."

"William Shakespeare" or "Shakespere" was thus, in my view, the ideally worst pseudonym which a poet who wished to be "concealed" could possibly have had the fatuity to select. His plays and poems would be, as they were, universally attributed to the actor, who is represented as a person conspicuously incapable of writing them. With Mr. Greenwood's arguments against the certainty of this attribution I deal later.

Had the actor been a man of rare wit, and of good education and wide reading, the choice of name might have been judicious. A "concealed poet" of high social standing, with a strange fancy for rewriting the plays of contemporary playwrights, might obtain the manuscript copies from their owners, the Lord Chamberlain's Company, through that knowledgeable, witty, and venal member of the company, Will Shakspere. He might then rewrite and improve them, more or less, as it was his whim to do. The actor might make fair copies in his own hand, give them to his company, and say that the improved works were from his own pen and genius. The lie might pass, but only if the actor, in his life and witty talk, seemed very capable of doing what he pretended to have done. But if the actor, according to some Baconians, could not write even his own name, he was impossible as a mask for the poet. He was also impossible, I think, if he were what Mr. Greenwood describes him to be.

Mr. Greenwood, in his view of the actor as he was when he came to London, does not deny to him the gift of being able to sign his name. But, if he were educated at Stratford Free School (of which there is no documentary record), according to Mr. Halliwell-Phillipps "he was removed from school long before the usual age," "in all probability" when "he was about thirteen" (an age at which some boys, later well known, went up to their universities). If we send him to school at seven or so, "it appears that he could only have enjoyed such advantages as it may be supposed to have provided for a period of five or six years at the outside. He was then withdrawn, and, as it seems, put to calf-slaughtering."

What the advantages may have been we try to estimate later.

Mr. Greenwood, with Mr. Halliwell-Phillipps, thinks that Will "could have learned but little there. No doubt boys at Elizabethan grammar schools, if they remained long enough, had a good deal of Latin driven into them. Latin, indeed, was the one subject that was taught; and an industrious boy who had gone through the course and attained to the higher classes would generally be able to write fair Latin prose. But he would learn very little else" (except to write fair Latin prose?). "What we now call 'culture' certainly did not enter into the 'curriculum,' nor 'English,' nor modern languages, nor 'literature.'" Mr. Halliwell-Phillipps says that "removed prematurely from school, residing with illiterate relatives in a bookless neighbourhood, thrown into the midst of occupations adverse to scholastic progress — it is difficult to believe that when he first left Stratford he was not all but destitute of polished accomplishments." Mr. Greenwood adds the apprenticeship to a butcher or draper, but doubts the poaching, and the frequent whippings and imprisonments, as in the story told by the Rev. R. Davies in 1708.

That this promising young man, "when he came to London, spoke the Warwickshire dialect or *patois* is, then, as certain as anything can be that is incapable of mathematical proof." "Here is the young Warwickshire provincial . . . " producing, apparently five or six years after his arrival in town, *Venus and Adonis* . . . "Is it conceivable that this was the work of the Stratford Player of whom we know so little, but of whom we know so much too much? If so we have here a veritable sixteenth-century miracle." Moreover, "our great supposed poet and dramatist had at his death neither book nor manuscript in his possession, or to which he was legally entitled, or in which he had any interest whatever."

If it be not conceivable now that the rustic speaking in a *patois* could write *Venus and Adonis*, manifestly it was inconceivable in 1593, when *Venus and Adonis* was signed "William Shakespeare." No man who knew the actor (as described) could believe that he was the author, but there does not exist the most shadowy hint proving that the faintest doubt was thrown on the actor's

authorship; ignorant as he was, bookless, and rude of speech. For such a Will as Mr. Greenwood describes to persuade the literary and dramatic world of his age that he *did* write the plays, would have been a miracle. Consequently Mr. Greenwood has to try to persuade us that there is no sufficient evidence that Will *did* persuade, say Ben Jonson, of his authorship and we shall see whether or not he works this twentieth-century miracle of persuasion.

Of course if Will were unable to write even his name, as an enthusiastic Baconian asserts, Mr. Greenwood sees that Will could not easily pass for the Author. But his own bookless actor with a *patois* seems to him, as author of *Venus and Adonis*, almost inconceivable. Yet, despite Will's bookless rusticity, this poem with *Lucrece*, which displays knowledge of a work of Ovid not translated into English by 1593, was regarded as his own. I must suppose, therefore, that Will was *not* manifestly so ignorant of Latin as Mr. Greenwood thinks. "I think it highly probable," says this critic, "that he attended the Grammar School at Stratford" (where nothing but Latin was taught) "for four or five years, and that, later in life, after some years in London, he was probably able to 'bumbast out a line,' and perhaps to pose as 'Poet-Ape that would be thought our chief.' Nay, I am not at all sure that he would not have been capable of collaborating with such a man as George Wilkins, and perhaps of writing quite as well as he, if not even better. But it does not follow from this that he was the author either of *Venus and Adonis* or of *Hamlet*."

Nothing follows from all this: we merely see that, in Mr. Greenwood's private opinion, the actor might write even better than George Wilkins, but could not write *Venus and Adonis*. Will, therefore, though bookless, is not debarred here from the pursuits of literature, in partnership with Wilkins. We have merely the critic's opinion that Will could not write *Hamlet*, even if, like Wordsworth, "he had the mind," even if the gods had made him more poetical than Wilkins.

Again, "he had had but little schooling; he had 'small Latin and less Greek'" (as Ben Jonson truly says), "but he was a good *Johannes Factotum*; he could arrange a scene, and, when necessary, 'bumbast out a blank verse.'"

The "*Johannes Factotum*," who could "bumbast out a blank verse," is taken from Robert Greene's hackneyed attack on an actor-poet, "Shake-scene," published in 1592. "Poet-Ape that would be thought our chief," is from an epigram on an actor-poet by Ben Jonson (1601–16?). If the allusions by Greene and Jonson are to our Will, he, by 1592, had a literary ambition so towering that he thought his own work in the new art of dramatic blank verse was equal to that of Marlowe (not to speak of Wilkins), and Greene reckoned him a dangerous rival to three of his playwright friends, of whom Marlowe is one, apparently.

If Jonson's "Poet-Ape" be meant for Will, by 1601 Will would fain "be thought the chief" of contemporary dramatists. His vanity soared far above George Wilkins! Greene's phrases and Jonson's are dictated by spite, jealousy, and envy; and from them a true view of the work of the man whom they envy, the actor-poet, cannot be obtained. We might as well judge Molière in the spirit of the author of *Elomire Hypocondre*, and of de Visé! The Anti-Willian arguments keep on appearing, going behind the scenes, and reappearing, like a stage army. To avoid this phenomenon I reserve what is to be said about "Shake-scene" and "Poet-Ape" for another place (p–145 *infra*). But I must give the reader a warning. Concerning "William Shakespeare" as a "*nom de plume*," or pseudonym, Mr. Greenwood says, "Some, indeed, would see through it, and roundly accuse the player of putting forth the works of others as his own. To such he would be a 'Poet-Ape,' or 'an upstart crow' (Shake-scene) 'beautified with the feathers of other writers.'"

If this be true, if "some would see through" (Mr. Greenwood, apparently, means *did* "see through") the "*nom de plume*," the case of the Anti-Willians is promising. But, in this matter, Mr. Greenwood *se trompe*. Neither Greene nor Jonson accused "Shake-scene" or "Poet-Ape" of "putting forth the works of others as his own." That is quite certain, as far as the scorns of Jonson and Greene have reached us. (See p–145 *infra*.) If an actor, obviously incapable of wit and poetry, were credited with the plays, the keenest curiosity would arise in "the profession," and among rival playwrights who envied the wealth and "glory" of the actors. This curiosity, prompting the wits and players to watch

and “shadow” Will, would, to put it mildly, most seriously imperil the secret of the concealed author who had the folly to sign himself “William Shakespeare.” Human nature could not rest under such a provocation as the “concealed poet” offered.

This is so obvious that had one desired to prove Bacon or the Unknown to be the concealed author, one must have credited his mask, Will, with abundance of wit and fancy, and, as for learning — with about as much as he probably possessed. But the Baconians make him an illiterate yokel, and we have quoted Mr. Greenwood’s estimate of the young Warwickshire provincial.

We all have our personal equations in the way of belief. That the plot of the “*nom de plume*” should have evaded discovery for a week, if the actor were the untutored countryman of the hypotheses, is to me, for one, absolutely incredible. A “concealed poet” looking about for a “*nom de plume*” and a mask behind which he could be hidden, would not have selected the name, or the nearest possible approach to the name, of an ignorant unread actor. As he was never suspected of not being the author of the plays and poems, Will cannot have been a country ignoramus, manifestly incapable of poetry, wit, and such learning as the plays exhibit. Every one must judge for himself. Mr. Greenwood fervently believes in what I disbelieve.

“Very few Englishmen . . . in Elizabethan times, concerned themselves at all, or cared one brass farthing, about the authorship of plays . . . “ says Mr. Greenwood.

Very few care now. They know the actors’ names: in vain, as a rule, do I ask playgoers for the name of the author of their entertainment. But in Elizabeth’s time the few who cared were apt to care very much, and they would inquire intensely when the Stratford actor, a bookless, untaught man, was announced as the author of plays which were among the most popular of their day. The seekers never found any other author. They left no hint that they suspected the existence of any other author. Hence I venture to infer that Will seemed to them no unread rustic, but a fellow of infinite fancy, — no scholar to be sure, but very capable of writing the pieces which he fathered.

They may all have been mistaken. Nobody can prove that Heywood and Ben Jonson, and the actors of the Company, were not mistaken. But certain it is that they thought the Will whom they knew capable of the works which were attributed to him. Therefore he cannot possibly have been the man who could not write, of the more impulsive Baconians; or the bookless, and probably all but Latinless, man of Mr. Greenwood's theory. The positions already seem to me to be untenable.

II. THE "SILENCE" ABOUT SHAKESPEARE

Before proceeding further to examine Mr. Greenwood's book, and the Baconian theories, with the careful attention which they deserve, we must clear the ground by explaining two points which appear to puzzle Baconians, though, to be sure, they have their own solutions of the problems.

The first question is: Why, considering that Shakespeare, by the consent of the learned of most of the polite foreign nations, was one of the world's very greatest poets, have we received so few and such brief notices of him from the pens of his contemporaries?

"It is wonderful," exclaims Mr. Crouch-Batchelor, "that hundreds of persons should not have left records of him. We know nearly as much about the most insignificant writer of the period as we know of him, but fifty times more about most of his contemporaries. It is senseless to try to account for this otherwise than by recognising that the man was not the author."

Mr. Crouch-Batchelor is too innocent. He sees the sixteenth century in the colours of the twentieth. We know nothing, except a few dates of birth, death, entrance at school, College, the Inns of Court, and so forth, concerning several of Shakespeare's illustrious contemporaries and successors in the art of dramatic poetry. The Baconians do not quite understand, or, at least, keep steadily before their minds, one immense difference between the Elizabethan age and later times. In 1590–1630, there was no public excitement about the characters, personalities, and anecdotage of merely literary men, poets, and playwrights, who held no position in public affairs, as Spenser did; or in Court, Society, and War, as Sidney did; who did not write about their own feuds and friendships, like Greene and Nash; who did not expand into prefaces and reminiscences, and satires, like Ben Jonson; who never killed anybody, as Ben did; nor were killed, like Marlowe; nor were involved, like him, in charges of atheism, and so forth; nor imprisoned with every chance of having their ears and noses slit, like Marston. Consequently, silence and night obscure the lives and personalities of

Kyd, Chapman, Beaumont, Fletcher, Dekker, Webster, and several others, as night and silence hide Shakespeare from our view.

He was popular on the stage; some of his plays were circulated separately in cheap and very perishable quartos. No collected edition of his plays appeared during his life; without that he could not be studied, and recognised in his greatness. He withdrew to the country and died. There was no enthusiastic curiosity about him; nobody Boswellised any playwright of his time. The Folio of 1623 gave the first opportunity of studying him as alone he can be studied. The Civil Wars and the Reign of the Saints distracted men's minds and depressed or destroyed the Stage.

Sir William Davenant, a boy when Shakespeare died, used to see the actor at his father's inn at Oxford, was interested in him, and cherished the embers of the drama, which were fading before the theatres were closed. Davenant collected what he could in the way of information from old people of the stage; he told Shakespearean anecdotes in conversation; a few reached the late day when uncritical inquiries began, say 1680–90 at earliest. The memories of ancient people of the theatre and clerks and sextons at Stratford were ransacked, to very little purpose.

As these things were so, how can we expect biographical materials about Shakespeare? As to the man, as to how his character impressed contemporaries, we have but the current epithets: "friendly," "gentle," and "sweet," the praise of his worth by two of the actors in his company (published in 1623), and the brief prose note of Ben Jonson, — this is more than we have for the then so widely admired Beaumont, Ben Jonson's friend, or Chapman, or the adored Fletcher. "Into the dark go one and all," Shakespeare and the others. To be puzzled by and found theories on the silence about Shakespeare is to show an innocence very odd in learned disputants.

The Baconians, as usual, make a puzzle and a mystery out of their own misappreciation of the literary and social conditions of Shakespeare's time. That world could not possibly appreciate his works as we do; the world, till 1623, possessed only a portion of his plays in cheap pamphlets, in several of these his

text was mangled and in places unintelligible. And in not a single instance were anecdotes and biographical traits of playwrights recorded, except when the men published matter about themselves, or when they became notorious in some way unconnected with their literary works. Drummond, in Scotland, made brief notes of Ben Jonson's talk; Shakespeare he never met.

That age was not widely and enthusiastically appreciative of literary merit in playwrights who were merely dramatists, and in no other way notorious or eminent. Mr. Greenwood justly says "the contemporary eulogies of the poet afford proof that there were some cultured critics of that day of sufficient taste and acumen to recognise, or partly recognise, his excellence . . . " (Here I omit some words, presently to be restored to the text.) From such critics the poet received such applause as has reached us. We also know that the plays were popular; but the audiences have not rushed to pen and ink to record their satisfaction. With them, as with all audiences, the actors and the *spectacle*, much more than the "cackle," were the attractions. When Dr. Ingleby says that "the bard of our admiration was unknown to the men of that age," he uses hyperbole, and means, I presume, that he was unknown, as all authors are, to the great majority; and that those who knew him in part made no modern fuss about him.

The second puzzle is, — Why did Shakespeare, conscious of his great powers, never secure for his collected plays the permanence of print and publication? We cannot be sure that he and his company, in fact, did not provide publishers with the copy for the better Quartos or pamphlets of separate plays, as Mr. Pollard argues on good grounds that they sometimes did. For the rest, no dramatic author edited a complete edition of his works before Ben Jonson, a scholarly man, set the example in the year of Shakespeare's, and of Beaumont's death (1616). Neither Beaumont nor Fletcher collected and published their works for the Stage. The idea was unheard of before Jonson set the example, and much of his work lay unprinted till years after his death. We must remember the conditions of play-writing in Shakespeare's time.

There were then many poets of no mean merit, all capable of admirable verse on occasion; and in various degrees possessed of the lofty, vigorous, and vivid style of that great age. The theatre, and writing for the theatre, afforded to many men of talent a means of livelihood analogous to that offered by journalism among ourselves. They were apt to work collectively, several hands hurrying out a single play; and in twos or threes, or fours or fives, they often collaborated.

As a general rule a play when finished was sold by the author or authors to a company of players, or to a speculator like the notorious Philip Henslowe, and the new owners, "the grand possessors," were usually averse to the publication of the work, lest other companies might act it. The plays were primarily written to be acted. The company in possession could have the play altered as they pleased by a literary man in their employment.

To follow Mr. Greenwood's summary of the situation "it would seem that an author could restrain any person from publishing his manuscript, or could bring an action against him for so doing, so long as he had not disposed of his right to it; and that the publisher could prevent any other publisher from issuing the work. At the same time it is clear that the law was frequently violated . . . whether because of the difficulty of enforcing it, or through the supineness of authors; and that in consequence authors were frequently defrauded by surreptitious copies of their works being issued by piratical publishers."

It may appear that to "authors" we should, in the case of plays, add "owners," such as theatrical companies, for no case is cited in which such a company brings an action against the publisher of a play which they own. The two players of Shakespeare's company who sign the preface to the first edition of his collected plays (1623, "The First Folio") complain that "divers stolen and surreptitious copies" of single plays have been put forth, "maimed and deformed by the frauds and stealths of injurious impostors." They speak as if they were unable to prevent, or had not the energy to prevent, these frauds. In the accounts of the aforesaid Henslowe, we find him paying forty shillings to a printer to stop or "stay" the printing of a play, *Patient Grizel*, by three of his hacks.

We perhaps come across an effort of the company to prevent or delay the publication of *The Merchant of Venice*, on July 17, 1598, in the *Stationers' Register*. James Robertes, and all other printers, are forbidden to print the book without previous permission from the Lord Chamberlain, the protector of Will Shakespeare's company. Two years passed before Robertes issued the book. As is well known, Heywood, a most prolific playwright, boasts that he never made a double sale of his pieces to the players and the press. Others occasionally did, which Heywood clearly thought less than honest.

As an author who was also an actor, and a shareholder in his company, Will's interests were the same as theirs. It is therefore curious that some of his pieces were early printed, in quartos, from very good copies; while others appeared in very bad copies, clearly surreptitious. Probably the company gave a good MS. copy, sometimes, to a printer who offered satisfactory terms, after the gloss of novelty was off the acted play. In any case, we see that the custom and interests of the owners of manuscript plays ran contrary to their early publication. In 1619 even Ben Jonson, who loved publication, told Drummond that half of his comedies were still unprinted.

These times were not as our own, and must not be judged by ours. Whoever wrote the plays, the actor, or Bacon, or the Man in the Moon; whoever legally owned the manuscripts, was equally incurious and negligent about the preservation of a correct text. As we shall see later, while Baconians urge without any evidence that Bacon himself edited, or gave to Ben Jonson the duty of editing, the first collected edition (1623), the work has been done in an indescribably negligent and reckless manner, and, as Mr. Greenwood repeatedly states, the edition, in his opinion, contains at least two plays not by his "Shakespeare" — that "concealed poet" — and masses of "non-Shakespearean" work.

How this could happen, if Bacon (as on one hypothesis) either revised the plays himself, or entrusted the task to so strict an Editor as Ben Jonson, I cannot imagine. This is also one of the difficulties in Mr. Greenwood's theory. Thus we cannot argue, "if the actor were the author, he must have been conscious of

his great powers. Therefore the actor cannot have been the author, for the actor wholly neglected to collect his printed and to print his manuscript works."

This argument is equally potent against the authorship of the plays by Bacon. He, too, left the manuscripts unpublished till 1623. "But he could not avow his authorship," cry Baconians, giving various exquisite reasons. Indeed, if Bacon were the author, he might not care to divulge his long association with "a cry of players," and a man like Will of Stratford. But he had no occasion to avow it. He had merely to suggest to the players, through any safe channel, that they should collect and publish the works of their old friend Will Shakspere.

Thus indifferent was the main author of the plays, whether he were actor or statesman; and the actor, at least, is not to blame for the chaos of the first collected edition, made while he was in his grave, and while Bacon was busy in revising and superintending Latin translations of his works on scientific subjects.

We now understand why there are so few contemporary records of Shakspere the man; and see that the neglect of his texts was extreme, whether or not he were the author. The neglect was characteristic of the playwrights of his own and the next generation. In those days it was no marvel; few cared. Nine years passed before a second edition of the collected plays appeared: thirty-two years went by before a third edition was issued — years of war and tumult, yet they saw the posthumous publication of the collected plays of Beaumont and Fletcher.

There remains one more mystery connected with publication. When the first collected edition of the plays appeared, it purported to contain "All His Comedies, Histories, and Tragedies." According to the postulate of the Baconians it was edited by the Author, or by Jonson acting for him. It contains several plays which, according to many critics, are not the author's. This, if true, is mysterious, and so is the fact that a few plays were published, as by Shakespeare, in the lifetime both of the actor and of Bacon; plays which neither acknowledged for his own, for we hear of no remonstrance from — whoever "William Shakespeare" was. It is impossible for me to say why there was no remonstrance.

Suppose that Will merely supplied Bacon's plays, under his own name, with a slight difference in spelling, to his company. It was as much his interest, in that case, to protest when Bacon's pen-name was taken in vain, as if he had spelled his own surname with an *a* in the second syllable.

There is another instance which Mr. Greenwood discusses twice. In 1599 Jaggard published "*The Passionate Pilgrim*; W. Shakespeare." Out of twenty poems, five only were by W. S. In 1612, Jaggard added two poems by Tom Heywood, retaining W. Shakespeare's name as sole author. "Heywood protested" in print, "and stated that *Shakespeare* was offended, and," says Mr. Greenwood, "very probably he was so; but as he was, so I conceive, 'a concealed poet,' writing under a *nom de plume*, he seems to have only made known his annoyance through the medium of Heywood."

If so, Heywood knew who the concealed poet was. Turning to p, 349, we find Mr. Greenwood repeating the same story, with this addition, that the author of the poems published by Jaggard, "to do himself right, hath since published them in his own name." That is, W. Shakespeare has since published under his own name such pieces of *The Passionate Pilgrim* as are his own. "The author, I know," adds Heywood, "was much offended with Mr. Jaggard that (altogether unknown to him) presumed to make so bold with his name."

Why was the author so slack when Jaggard, in 1599, published W. S.'s poems with others *not* by W. S.?

How can anyone explain, by any theory? It was as open to him in 1599 as in 1612 to publish his own pieces under his own name, or pen-name.

"Here we observe," says Mr. Greenwood, "that Heywood does nothing to identify 'the author with the player.'" This is, we shall see, the eternal argument. Why should Heywood, speaking of W. Shakespeare, explain what all the world knew? There was no other W. Shakespeare (with or without the *e* and *a*) but one, the actor, in the world of letters of Elizabeth and James. Who the author was Heywood himself has told us, elsewhere: the author was — Will!

But why Shakespeare was so indifferent to the use of his name, or, when he was moved, acted so mildly, it is not for me or anyone to explain. We do not

know the nature of the circumstances in detail; we do not know that the poet saw hopes of stopping the sale of the works falsely attributed to him. I do not even feel certain that he had not a finger in some of them. Knowing so little, a more soaring wit than mine might fly to the explanation that "Shakespeare" was the "*nom de plume*" of Bacon or his unknown equivalent, and that he preferred to "let sleeping dogs lie," or, as Mr. Greenwood might quote the Latin tag, said *ne moveas Camarinam*.

III. THAT IMPOSSIBLE HE — THE SCHOOLING OF SHAKESPEARE

The banner-cry of the Baconians is the word "Impossible!" It is impossible that the actor from Stratford (as they think of him, a bookless, untutored lad, speaking in *patois*) should have possessed the wide, deep, and accurate scholarship displayed by the author of the plays and poems. It is impossible that at the little Free School of Stratford (if he attended it), he should have gained his wide knowledge of the literatures of Greece and Rome. To these arguments, the orthodox Stratfordian is apt to reply, that he finds in the plays and poems plenty of inaccurate general information on classical subjects, information in which the whole literature of England then abounded. He also finds in the plays some knowledge of certain Latin authors, which cannot be proved to have been translated at the date when Shakespeare drew on them. How much Latin Shakespeare knew, in our opinion, will presently be explained.

But, in reply to the Baconians and the Anti-Willians, we must say that while the author of the plays had some lore which scholars also possessed, he did not use his knowledge like a scholar. We do not see how a scholar could make, as the scansion of his blank verse proves that the author did make, the second syllable of the name of Posthumus, in *Cymbeline*, *long*. He must have read a famous line in Horace thus,

"*Eheu fugaces Posthoome*, *Posthoome*!"

which could scarce 'scape whipping, even at Stratford Free School. In the same way he makes the penultimate syllable of Andronicus short, equally impossible.

Mr. Greenwood, we shall see, denies to him *Titus Andronicus*, but also appears to credit it to him, as one of the older plays which he "revised, improved, and dressed," and *that* is taken to have been all his "authorship" in several cases. A scholar would have corrected, not accepted, false quantities. In other cases, as when Greeks and Trojans cite Plato and Aristotle in *Troilus and*

Cressida, while Plato and Aristotle lived more than a thousand years after the latest conceivable date of the siege of Troy, I cannot possibly suppose that a scholar would have permitted to himself the freak, any more than that in *The Winter's Tale* he should have borrowed from an earlier novel the absurdity of calling Delphi "Delphos" (a non-existent word), of confusing "Delphos" with Delos, and placing the Delphian Oracle in an island. In the same play the author, quite needlessly, makes the artist Giulio Romano (1492–1546) contemporary with the flourishing age of the oracle of the Pythian Apollo. This, at least, would not be ignorance.

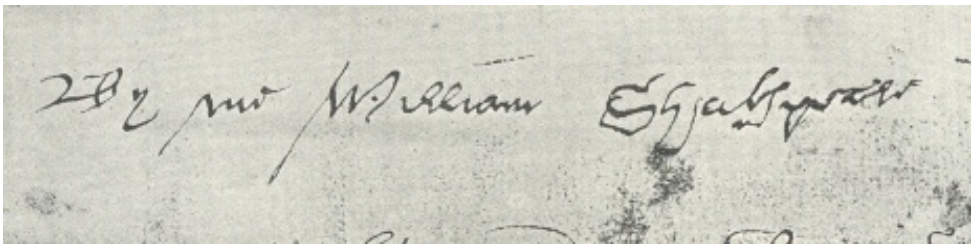
We have, I think, sufficient testimony to Ben's inability to refrain from gibes at Shakspere's want of scholarship. Rowe, who had traditions of Davenant's, tells how, in conversation with Suckling, Davenant, Endymion Porter, and Hales of Eton, Ben harped on Will's want of learning; and how Hales snubbed him. Indeed, Ben could have made mirth enough out of *The Winter's Tale*. For, granting to Mr. Greenwood that "the mention of Delphos suggests the Bohemia of a much earlier date, and under the reign of Ottocar (1255–78) Bohemia extended from the Adriatic to the shores of the Baltic," that only makes matters far worse. "Delphos" never was a place-name; there was no oracle on the isle of "Delphos"; there were no Oracles in 1255–78 (A.D.); and Perdita, who could have sat for her portrait to Giulio Romano, was contemporary with an Oracle at *Delphos*, but not with Ottocar.

There never was so mad a mixture, not even in *Ivanhoe*; not even in *Kenilworth*. Scott erred deliberately, as he says in his prefaces; but Will took the insular oracle of Delphos from Greene, inserted Giulio Romano "for his personal diversion," never heard of Ottocar (no more than I), and made a delightful congeries of errors in gaiety of heart. Nobody shall convince me that Francis Bacon was so charmingly irresponsible; but I cannot speak so confidently of Mr. Greenwood's Great Unknown, a severe scholar, but perhaps a frisky soul. There was no region called Bohemia when the Delphic oracle was in vigour; — this apology (apparently contrived by Sir Edward Sullivan) is the most comic of erudite reflections.

Some cruel critic has censured the lovely speech of Perdita, concerning the flowers which Proserpine let fall, when she was carried off by Dis. How could she, brought up in the hut of a Bohemian shepherd, know anything of the Rape of Proserpine? Why not, as she lived in the days of the Delphic Oracle — and Giulio Romano, and of printed ballads.

It is impossible, Baconians cry, that the rabbit-stealer, brought up among the Audreys and Jaquenettas of Warwickshire, should have created the noble and witty ladies of the Court; and known the style of his Armado; and understood how dukes and kings talk among themselves — usually in blank verse, it appears.

It is impossible that the home-keeping yokel should have heard of the "obscure" (*sic*!) Court of Navarre; and known that at Venice there was a place called the Rialto, and a "common ferry" called "the tranect." It is impossible that he should have had "an intimate knowledge of the castle of Elsinore," though an English *troupe* of actors visited Denmark in 1587. To Will all this knowledge was *impossible*; for these and many more exquisite reasons the yokel's authorship of the plays is a physical impossibility. But scholars neither invent nor tolerate such strange liberties with time and place, with history, geography, and common sense. Will Shakspere either did not know what was right, or, more probably, did not care, and supposed, like Fielding in the old anecdote, that the audience "would not find it out." How could a scholar do any of these things? He was as incapable of them as Ben Jonson. Such sins no scholar is inclined to; they have, for him, no temptations.



As to Shakspere's schooling, the Baconians point at the current ignorance of Stratford-on-Avon, where many topping burgesses, even aldermen, "made their marks," in place of signing their names to documents. Shakespeare's father, wife, and daughter "made their marks," in place of signing. So did Lady Jane Gordon, daughter of the Earl of Huntly, when she married the cultivated Earl of Bothwell (1566).

There is no evidence, from a roll of schoolboys at Stratford Free Grammar School, about 1564–77, that any given boy attended it; for no roll exists. Consequently there is no evidence that Will was a pupil.

"In the Appendix to Malone's *Life of Shakespeare* will be found two Latin letters, written by alumni of Stratford School contemporary with Shakespeare," says Mr. Collins. But though the writers were Stratford boys contemporary with Shakespeare, in later life his associates, as there is no roll of pupils' names how do we know, the Baconians may ask, that these men were educated at Stratford School? Why not at Winchester, Eton, St. Paul's, or anywhere? Need one reply?

Mr. Collins goes on, in his simple confiding way, to state that "one letter is by Abraham Sturley, afterwards an alderman of Stratford . . . " Pursuing the facts, we find that Sturley wrote in Latin to "Richard Quiney, Shakespeare's friend," who, if he could read Sturley's letter, could read Latin. Then *young* Richard Quiney, apparently aged eleven, wrote in Latin to his father. If young Richard Quiney be the son of Shakespeare's friend, Richard Quiney, then, of course, his Latin at the age of eleven would only prove that, if he were a schoolboy at Stratford, *one* Stratford boy could write Latin in the generation following that of Shakespeare. Thus may reason the Baconians.

Perhaps, however, we may say that if Stratford boys contemporary with Shakspere, in his own rank and known to him, learned Latin, which they retained

in manhood, Shakspere, if he went to school with them, may have done as much.

Concerning the school, a Free Grammar School, we know that during Shakespeare's boyhood the Mastership was not disdained by Walter Roche, perhaps a Fellow of what was then the most progressive College in learning of those at Oxford, namely, Corpus Christi. That Shakespeare could have been his pupil is uncertain; the dates are rather difficult. I think it probable that he was not, and we do not know the qualifications of the two or three succeeding Masters.

As to the methods of teaching and the books read at Grammar Schools, abundance of information has been collected. We know what the use was in one very good school, Ipswich, from 1528; in another in 1611; but as we do not possess any special information about Stratford School, Mr. Greenwood opposes the admission of evidence from other academies. A man might think that, however much the quality of the teaching varied in various free schools, the nominal curriculum would be fairly uniform.

As to the teacher, a good endowment would be apt to attract a capable man. What was the endowment of Stratford School? It was derived from the bequest of Thomas Jolyffe (died 1482), a bequest of lands in Stratford and Dodwell, and before the Reformation the Brethren of the Guild were "to find a priest fit and able in knowledge to teach grammar freely to all scholars coming to him, taking nothing for their teaching . . . " "The Founder's liberal endowment made it possible to secure an income for the Master by deed. Under the Reformation, Somerset's Commission found that the School Master had £10 yearly by patent; the school was well conducted, and was not confiscated."

Baconians can compare the yearly £20 (the salary in 1570–6, which then went much further than it does now) with the incomes of other masters of Grammar Schools, and thereby find out if the Head-Master was very cheap. Mr. Elton (who knew his subject intimately) calls the provision "liberal." The Head-Master of Westminster had £20 and a house.

As to the method of teaching, it was colloquial; questions were asked and answered in Latin. This method, according to Dr. Rouse of Perse School, brings

boys on much more rapidly than does our current fashion, as may readily be imagined; but experts vary in opinion. The method, I conceive, should give a pupil a vocabulary. Lilly's Latin Grammar was universally used, and was learned by rote, as by George Borrow, in the last century. See *Lavengro* for details. Conversation books, *Sententiæ Pueriles*, were in use; with easy books, such as Corderius's *Colloquia*, and so on, for boys were taught to *speak* Latin, the common language of the educated in Europe. Waifs of the Armada, Spaniards wrecked on the Irish coast, met "a savage who knew Latin," and thus could converse with him. The Eclogues of Mantuanus, a Latin poet of the Renaissance (the "Old Mantuan" of *Love's Labour's Lost*), were used, with Erasmus's *Colloquia*, and, says Mr. Collins, "such books as Ovid's Metamorphoses" (and other works of his), "the Æneid, selected comedies of Terence and Plautus, and portions of Cæsar, Sallust, Cicero, and Livy."

"Pro-di-gi-ous!" exclaims Mr. Greenwood, referring to what Mr. Collins says Will had read at school. But precocious Latinity was not thought "prodigious" in an age when nothing but Latin was taught to boys — not even cricket. Nor is it to be supposed that every boy read in all of these authors, still less read all of their works, but these were the works of which portions were read. It is not prodigious. I myself, according to my class-master, was "a bad and careless little boy" at thirteen, incurably idle, but I well remember reading in Ovid and Cæsar, and Sallust, while the rest of my time was devoted to the total neglect of the mathematics, English "as she was taught," History, and whatsoever else was expected from me. Shakespeare's time was not thus frittered away; Latin was all he learned (if he went to school), and, as he was (on my theory) a very clever, imaginative kind of boy, I can conceive that he was intensely interested in the stories told by Ovid, and in Catiline's Conspiracy (thrilling, if you know your Sallust); and if his interest were once aroused, he would make rapid progress. My own early hatred of Greek was hissing and malignant, but as soon as I opened Homer, all was changed. One was intensely interested!

Mr. Greenwood will not, in the matter of books, go beyond Mr. Halliwell-Phillipps, "Lilly's Grammar, and a few classical works chained to the desks of

the free schools." Mr. Collins himself gives but "a few classical books," of which *portions* were read. The chains were in all the free schools, if Mr. Halliwell-Phillipps is right. The chains, if authentic, do not count as objections.

Here it must be noted that Mr. Greenwood's opinion of Will's knowledge and attainments is not easily to be ascertained with precision. He sees, of course, that the pretension of the extreme Baconians — Will could not even write his name — is absurd. If he could not write, he could not pass as the author. Mr. Greenwood "fears that the arguments" (of a most extreme Baconian) "would drive many wandering sheep back to the Stratfordian fold."

He has therefore to find a *via media*, to present, as the pseudo-author, a Will who possessed neither books nor manuscripts when he made his Testament; a rustic, bookless Will, speaking a patois, who could none the less pass himself off as the author. So "I think it highly probable," says Mr. Greenwood, "that he attended the Grammar School at Stratford for four or five years, and that, later in life, after some years in London, he was probably able to 'bumbast out a line,' and perhaps to pose as 'Poet-Ape who would be thought our chief.'" Again, "He had had but little schooling; he had 'small Latin and less Greek'; but he was a good *Johannes Factotum*, he could arrange a scene, and, when necessary, 'bumbast out a blank verse.'"

But this is almost to abandon Mr. Greenwood's case. Will appears to me to be now perilously near acceptance as Greene's "Shake-scene," who was a formidable rival to Greene's three professional playwrights: and quite as near to Ben's Poet-Ape "that would be thought our chief," who began by re-making old plays; then won "some little wealth and credit on the scene," who had his "works" printed (for Ben expects them to reach posterity), and whom Ben accused of plagiarism from himself and his contemporaries. But this Shake-scene, this Poet-Ape, is merely our Will Shakespeare as described by bitterly jealous and envious rivals. Where are now the "works" of "Poet-Ape" if they are not the works of Shakespeare which Ben so nobly applauded later, if they are not in the blank verse of Greene's Shake-scene? "Shakespeare's plays" we call them.

When was it "necessary" for the "Stratford rustic" to "bumbast out a blank verse"? Where are the blank verses which he bumbasted out? For what purposes were they bumbasted? By 1592 "Shake-scene" was ambitious, and thought his blank verse as good as the best that Greene's friends, including Marlowe, could write. He had plenty of time to practise before the date when, as Ben wrote, "he would be thought our chief." He would not cease to do that in which he conceived himself to excel; to write for the stage.

When once Mr. Greenwood deems it "highly probable" that Will had four or five years of education at a Latin school, Will has as much of "grounding" in Latin, I think, as would account for all the knowledge of the Roman tongue which he displays. His amount of teaching at school would carry and tempt even a boy who was merely clever, and loved to read romantic tales and comic plays, into Ovid and Plautus — English books being to him not very accessible.

Here I may speak from my own memories, for though utterly idle where set school tasks were concerned, I tried very early to worry the sense out of Aristophanes — because he was said to contain good reading.

To this amount of taste and curiosity, nowise unexampled in an ordinary clever boy, add *Genius*, and I feel no difficulty as to Will's "learning," such as, at best, it was. "The Stratfordian," says Mr. Greenwood, "will ingeminate 'Genius! Genius!'" I *do* say "Genius," and stand by it. The ordinary clever boy, in the supposed circumstances, could read and admire his Ovid (though Shakespeare used cribs also), the man of genius could write *Venus and Adonis*.

Had I to maintain the Baconian hypothesis, I would not weigh heavily on bookless Will's rusticity and patois. Accepting Ben Jonson's account of his "excellent phantasy, brave notions, and gentle expressions, wherein he flowed with that facility . . . ," accepting the tradition of his lively wit; admitting that he had some Latin and literature, I would find in him a sufficiently plausible mask for that immense Unknown with a strange taste for furbishing up older plays. I would merely deny to Will his *genius*, and hand *that* over to Bacon — or Bungay. Believe me, Mr. Greenwood, this is your easiest way! — perhaps this *is* your way? — the plot of the unscrupulous Will, and of your astute Bungay,

might thus more conceivably escape detection from the pack of envious playwrights.

According to "all tradition," says Mr. Greenwood, Shakespeare was taken from school at the age of thirteen. Those late long-descended traditions of Shakespeare's youth are of little value as evidence; but, if it pleases Mr. Greenwood, I will, for the sake of argument, accept the whole of them. Assuredly I shall not arbitrarily choose among the traditions: all depends on the genealogical steps by which they reach us, as far as these can be discovered.

According to the tattle of Aubrey the antiquary, publishing in 1680, an opinion concerning Shakspere's education reached him. It came thus; there had been an actor in Shakspere's company, one Phillips, who, dying in 1605, left to Shakspere the usual thirty-shilling piece of gold; and the same "to my servant, Christopher Beeston." Christopher's son, William, in 1640, became deputy to Davenant in the management of "the King's and Queen's Young Company", and through Beeston, according to Aubrey, Davenant learned; through Beeston Aubrey learned, that Shakespeare "understood Latin pretty well, for he had been in his younger days a school-master in the country." Aubrey writes that "old Mr. Beeston, whom Mr. Dryden calls 'the chronicle of the stage,'" died in 1682.

This is a fair example of the genealogy of the traditions. Phillips, a friend of Shakspere, dies in 1605, leaving a servant, Christopher Beeston (he, too, was a versifier), whose son, William, dies in 1682; he is "the chronicle of the stage." Through him Davenant gets the story, through him Aubrey gets the story, that Shakspere "knew Latin pretty well," and had been a rural dominie. Mr. Greenwood devotes much space to disparaging Aubrey (and I do not think him a scientific authority, *moult s'en faut*), but Mr. Greenwood here says not a word as to the steps in the descent of the tradition. He frequently repeats himself, thereby forcing me to more iteration than I like. He had already disparaged Aubrey in note I to , but there he approached so closely to historical method as to say that "Aubrey quotes Beeston, a seventeenth-century actor, as his authority." On he dismisses the anecdote (which does not suit his book) as "a

mere myth." "*He* knows, *he* knows" which traditions are mythical, and which possess a certain historical value.

My own opinion is that Shakspere did "know Latin pretty well," and was no *scholar*, as his contemporaries reckoned scholarship. He left school, if tradition speak true, by a year later than the age, twelve, when Bacon went to Cambridge. Will, a clever kind of lad (on my theory), left school at an age when some other clever lads became freshmen. Why not? Gilbert Burnet (of whom you may have heard as Bishop of Salisbury under William III) took his degree at the age of fourteen.

Taking Shakspere as an extremely quick, imaginative boy, with nothing to learn but Latin, and by the readiest road, the colloquial, I conceive him to have discovered that, in Ovid especially, were to be found the most wonderful and delightful stories, and poetry which could not but please his "green unknowing youth." In the years before he left Stratford, and after he left school (1577–87?), I can easily suppose that he was not *always* butchering calves, poaching, and making love; and that, if he could get books in no other way, this graceless fellow might be detected on a summer evening, knitting his brows over the stories and jests of the chained Ovid and Plautus on his old schoolroom desk. *Moi qui parle*, I am no genius; but stories, romance, and humour would certainly have dragged me back to the old desks — if better might not be, and why not Shakspere? Put yourself in his place, if you have ever been a lad, and if, as a lad, you liked to steal away into the world of romance, into fairyland.

If Will wrote the plays, he (and indeed whoever wrote the plays) was a marvel of genius. But I am not here claiming for him genius, but merely stating my opinion that if he were fond of stories and romance, had no English books of poetry and romance, and had acquired as much power of reading Latin as a lively, curious boy could easily gain in four years of exclusively Latin education, he might continue his studies as he pleased, yet be, so far, no prodigy.

I am contemplating Will in the conditions on which the Baconians insist; if they will indeed let us assume that for a few years he was at a Latin school. I credit the graceless loon with the curiosity, the prompt acquisitiveness, the love

of poetry and romance, which the author of the plays must have possessed in youth. "Tradition says nothing of all that," the Baconian answers, and he may now, if he likes, turn to my reply in *The Traditional Shakespeare*. Meanwhile, how can you expect old clerks and sextons, a century after date, in a place where literature was *not* of supreme interest, to retain a tradition that Will used to read sometimes (if he did), in circumstances of privacy? As far as I am able to judge, had I been a boy at Stratford school for four years, had been taught nothing but Latin, and had little or no access to English books of poetry and romance, I should have acquired about the same amount of Latin as I suppose Shakspere to have possessed. Yet I could scarcely, like him, have made the second syllable in "Posthumus" long! Sir Walter Scott, however, was guilty of similar false quantities: he and Shakspere were about equally scholarly.

I suppose, then, that Shakspere's "small Latin" (as Jonson called it) enabled him to read in the works of the Roman clerks; to read sufficient for his uses. As a fact, he made use of English translations, and also of Latin texts. Scholars like Bacon do not use bad translations of easy Latin authors. If Bacon wanted Plutarch, he went to Plutarch in Greek, not to an English translation of a French translation of a Latin translation.

Some works of Shakespeare, the *Lucrece*, for example, and *The Comedy of Errors* (if he were not working over an earlier canvas from a more learned hand), and other passages, show knowledge of Latin texts which in his day had not appeared in published translations, or had not been translated at all as far as we know. In my opinion Will had Latin enough to puzzle out the sense of the Latin, never difficult, for himself. He could also "get a construe," when in London, or help in reading, from a more academic acquaintance: or buy a construe at no high ransom from some poor scholar. No contemporary calls him scholarly; the generation of men who were small boys when he died held him for no scholar. The current English literature of his day was saturated with every kind of classical information; its readers, even if Latinless, knew, or might know a world of lore with which the modern man is seldom acquainted. The ignorant

Baconian marvels: the classically educated Baconian who is not familiar with Elizabethan literature is amazed. Really there is nothing worthy of their wonder.

Does any contemporary literary allusion to Shakespeare call him "*learned*"? He is "sweet," "honey-tongued," "mellifluous," and so forth, but I ask for any contemporary who flattered him with the compliment of "learned." What Ben Jonson thought of his learning (but Ben's standard was very high), what Milton and Fuller, boys of eight when he died, thought of his learning, we know. They thought him "Fancy's child" (Milton) and with no claims to scholarship (Fuller), with "small Latin and less Greek" (Jonson). They speak of Shakespeare the author and actor; not yet had any man divided the persons.

Elizabethan and Jacobean scholarly poets were widely read in the classics. They were not usually, however, scholars in the same sense as our modern scholarly poets and men of letters; such as Mr. Swinburne among the dead, and Mr. Mackail and Sir Gilbert Murray — if I may be pardoned for mentioning contemporary names. But Elizabethan scholarly poets, and Milton, never regarded Shakespeare as learned. Perhaps few modern men of letters who are scholars differ from them. The opinion of Mr. Collins is to be discussed presently, but even he thought Shakespeare's scholarship "inexact," as we shall see.

I conceive that Shakspere "knew Latin pretty well," and, on Ben Jonson's evidence, he knew "less Greek." That he knew *any* Greek is surprising. Apparently he did, to judge from Ben's words. My attitude must, to the Baconians, seem frivolous, vexatious, and evasive. I cannot pretend to know what was Shakspere's precise amount of proficiency in Latin when he was writing the plays. That between his own knowledge, and construes given to him, he might easily get at the meaning of all the Latin, not yet translated, which he certainly knew, I believe.

Mr. Greenwood says "the amount of reading which the lad Shakspere must have done, and assimilated, during his brief sojourn at the Free School is positively amazing." But I have shown how an imaginative boy, with little or no access to English poetry and romances, might continue to read Latin "for

human pleasure" after he left school. As a professional writer, in a London where Latinists were as common as now they are rare in literary society, he might read more, and be helped in his reading. Any clever man might do as much, not to speak of a man of genius. "And yet, alas, there is no record or tradition of all this prodigious industry. . . . " I am not speaking of "prodigious industry," and of that — at school. In a region so non-literary as, by his account, was Stratford, Mr. Greenwood ought not to expect traditions of Will's early reading (even if he studied much more deeply than I have supposed) to exist, from fifty to seventy years after Will was dead, in the memories of the sons and grandsons of country people who cared for none of these things. The thing is not reasonable.

Let me take one example of what Mr. E. A. Sonnenschein is quoted as saying (somewhere) about Shakespeare's debt to Seneca's then untranslated paper *De Clementia* (1, 3, 3; I, 7, 2; I, 6, I). It inspires Portia's speech about Mercy. Here I give a version of the Latin.

"Clemency becometh, of all men, none more than the King or chief magistrate (*principem*) . . . No one can think of anything more becoming to a ruler than clemency . . . which will be confessed the fairer and more goodly in proportion as it is exhibited in the higher office . . . But if the placable and just gods punish not instantly with their thunderbolts the sins of the powerful, how much more just it is that a man set over men should gently exercise his power. What? Holds not he the place nearest to the gods, who, bearing himself like the gods, is kind, and generous, and uses his power for the better? . . . Think . . . what a lone desert and waste Rome would be, were nothing left, and none, save such as a severe judge would absolve."

The last sentence is fitted with this parallel in Portia's speech:

"Consider this
That in the course of Justice none of us
Should see salvation."

Here, at least, Protestant theology, not Seneca, inspires Portia's eloquence.

Now take Portia:

"The quality of Mercy is not strain'd;
It droppeth as the gentle rain from heaven
Upon the place beneath: it is twice blessed;
It blesseth him that gives and him that takes;"

(Not much Seneca, so far!)
"'Tis mightiest in the mightiest; it becomes
The thronèd monarch better than his crown;
His sceptre shows the force of temporal power,
The attribute to awe and majesty,
Wherein doth sit the dread and fear of kings;
But Mercy is above this sceptred sway,
It is enthronèd in the hearts of kings,
It is an attribute to God himself;
And earthly power doth then show likest God's,
When mercy seasons justice . . ."

There follows the passage about none of us seeing salvation, already cited, and theological in origin.

Whether Shakespeare could or could not have written these reflections, without having read Seneca's *De Clementia*, whether, if he could not conceive the ideas "out of his own head," he might not hear Seneca's words translated in a sermon, or in conversation, or read them cited in an English book, each reader must decide for himself. Nor do I doubt that Shakespeare could pick out what he wanted from the Latin if he cast his eye over the essay of the tutor of Nero.

My view of Shakespeare's Latinity is much like that of Sir Walter Raleigh. As far as I am aware, it is the opinion usually held by people who approach the

subject, and who have had a classical education. An exception was the late Mr. Churton Collins, whose ideas are discussed in the following chapter.

In his youth, and in the country, Will could do what Hogg and Burns did (and Hogg had no education at all; he was self-taught, even in writing). Will could pick up traditional, oral, popular literature. "His plays," says Sir Walter Raleigh, "are extraordinarily rich in the floating debris of popular literature, — scraps and tags and broken ends of songs and ballads and romances and proverbs. In this respect he is notable even among his contemporaries. . . . Edgar and Iago, Petruchio and Benedick, Sir Toby and Pistol, the Fool in *Lear* and the Grave-digger in *Hamlet*, even Ophelia and Desdemona, are all alike singers of old songs. . . . " He is rich in rural proverbs *not* recorded in Bacon's *Promus*.

Shakespeare in the country, like Scott in Liddesdale, "was making himself all the time."

The Baconian will exclaim that Bacon was familiar with many now obsolete rural words. Bacon, too, may have had a memory rich in all the tags of song, ballad, story, and *dicton*. But so may Shakespeare.

IV. MR. COLLINS ON SHAKESPEARE'S LEARNING

That Shakspere, whether "scholar" or not, had a very wide and deep knowledge both of Roman literature and, still more, of the whole field of the tragic literature of Athens, is a theory which Mr. Greenwood seems to admire in that "violent Stratfordian," Mr. Churton Collins. I think that Mr. Collins did not persuade classical scholars who have never given a thought to the Baconian belief, but who consider on their merits the questions: Does Shakespeare show wide classical knowledge? Does he use his knowledge as a scholar would use it?

My friend, Mr. Collins, as I may have to say again, was a very wide reader of poetry, with a memory like Macaulay's. It was his native tendency to find coincidences in poetic passages (which, to some, to me for example, did not often seem coincidental); and to explain coincidences by conscious or subconscious borrowing. One remarked in him these tendencies long before he wrote on the classical acquirements of Shakespeare.

While Mr. Collins tended to account for similarities in the work of authors by borrowing, my tendency was to explain them as undesigned coincidences. The question is of the widest range. Some inquirers explain the often minute coincidences in myths, popular tales, proverbs, and riddles, found all over the world, by diffusion from a single centre (usually India). Others, like myself, do not deny cases of transmission, but in other cases see spontaneous and independent, though coincident invention. I do not believe that the Arunta of Central Australia borrowed from Plutarch the central feature of the myth of Isis and Osiris.

It is not on Shakespeare's use, now and then, of Greek and Latin models and sources, but on coincidences detected by Mr. Collins himself, and not earlier remarked, that he bases his belief in the saturation of Shakespeare's mind with Roman and Athenian literature. Consequently we can only do justice to Mr. Collins's system, if we compare example after example of his supposed

instances of Shakespeare's borrowing. This is a long and irksome task; and the only fair plan is for the reader to peruse Mr. Collins's *Studies in Shakespeare*, compare the Greek and Roman texts, and weigh each example of supposed borrowing for himself. Baconians must delight in this labour.

I shall waive the question whether it were not possible for Shakespeare to obtain a view of the manuscript translation of plays of Plautus made by Warner for his unlearned friends, and so to use the *Menæchmi* as the model of *The Comedy of Errors*. He does not borrow phrases from it, as he does from North's *Plutarch*.

Venus and Adonis owes to Ovid, at most, but ideas for three purple patches, scattered in different parts of the *Metamorphoses*. *Lucrece* is based on the then untranslated *Fasti* of Ovid. I do not think Shakespeare incapable of reading such easy Latin for himself; or too proud to ask help from a friend, or buy it from some poor young University man in London. That is a simple and natural means by which he could help himself when in search of a subject for a play or poem; and ought not to be overlooked.

Mr. Collins, in his rapturous account of Shakespeare's wide and profound knowledge of the classics, opens with the remark: "Nothing which Shakespeare has left us warrants us in pronouncing with certainty that he read the Greek classics in the original, or even that he possessed enough Greek to follow the Latin versions of those classics in the Greek text." In that case, how did Shakespeare's English become contaminated, as Mr. Collins says it did, with Greek *idioms*, while he only knew the Greek plays through Latin translations?

However this is to be answered, Mr. Collins proceeds to prove Shakespeare's close familiarity with Latin and with Greek dramatic literature by a method of which he knows the perils— "it is always perilous to infer direct imitation from parallel passages which may be mere coincidences." Yet this method is what he practises throughout; with what amount of success every reader must judge for himself.

He thinks it "surely not unlikely" that Polonius's

("Neither a borrower nor a lender be

"Neither a borrower nor a lender be:
For loan oft loses both itself and friend,"

may be a terse reminiscence of seven lines in Plautus (*Trinummus*, iv. 3). Why, Polonius is a coiner of commonplaces, and if ever there were a well-known reflection from experience it is this of the borrowers and lenders.

Next, take this of Plautus (*Pseudolus*, I, iv. 7–10), "But just as the poet when he has taken up his tablets seeks what exists nowhere among men, and yet finds it, and makes that like truth which is mere fiction." We are to take this as the possible germ of Theseus's theory of the origin of the belief in fairies:

"And as imagination bodies forth
The *forms* of things unknown, the poet's pen
Turns them to *shapes*, and gives to airy nothing
A local habitation and a name."

The reasoning is odd; imagination bodies forth *forms*, and the poet's pen turns them to *shapes*. But to suppose that Shakespeare here borrowed from Plautus appears highly superfluous.

These are samples of Mr. Collins's methods throughout.

Of Terence there were translations — first in part; later, in 1598, of the whole. Of Seneca there was an English version (1581). Mr. Collins labours to show that one passage "almost certainly" implies Shakespeare's use of the Latin; but it was used "by an inexact scholar," — a terribly inexact scholar, if he thought that "*alienus*" ("what belongs to another") meant "slippery"!

Most of the passages are from plays (*Titus Andronicus* and *Henry VI*, i., ii., iii.), which Mr. Greenwood denies (usually) to *his* author, the Great Unknown. Throughout these early plays Mr. Collins takes Shakespeare's to resemble Seneca's *Latin* style: Shakespeare, then, took up Greek tragedy in later life; after the early period when he dealt with Seneca. Here is a sample of borrowing from Horace, "*Persicos odi puer apparatus*" (*Odes*. I, xxxviii. I). Mr. Collins quotes *Lear* (III, vi. 85) thus, "You will say they are *Persian attire*." Really, Lear in his

wild way says to Edgar, “I do not like the fashion of your garments: you will say they are Persian; but let them be changed.” Mr. Collins changes this into “you will say they are *Persian attire*,” a phrase “which could only have occurred to a classical scholar.” The phrase is not in Shakespeare, and Lear’s wandering mind might as easily select “Persian” as any other absurdity.

So it is throughout. Two great poets write on the fear of death, on the cries of new-born children, on dissolution and recombination in nature, on old age; they have ideas in common, obvious ideas, glorified by poetry, — and Shakespeare, we are told, is borrowing from Lucretius or Juvenal; while the critic leaves his reader to find out and study the Latin passages which he does not quote. So arbitrary is taste in these matters that Mr. Collins, like Mr. Grant White, but independently, finds Shakespeare putting a thought from the *Alcibiades I* of Plato into the mouth of Achilles in *Troilus and Cressida*, while Mr. J. M. Robertson suggests that the borrowing is from Seneca — where Mr. Collins does not find “the smallest parallel.” Mr. Collins is certainly right; the author of *Troilus* makes Ulysses quote Plato as “the author” of a remark, and makes Achilles take up the quotation, which Ulysses goes on to criticise.

Thus, in this play, not only Aristotle (as Hector says) but Plato are taken to have lived before the Trojan war, and to have been read by the Achæans!

There were Latin translations of Plato; the *Alcibiades I* was published apart, from Ficinus’ version, in 1560, with the sub-title, *Concerning the Nature of Man*. Who had read it? — Shakespeare, or one of the two authors (Dekker and Chettle) of another *Troilus and Cressida* (now lost), or Bacon, or Mr. Greenwood’s Unknown? Which of these Platonists chose to say that Plato and Aristotle lived long before Homer? Which of them followed the Ionic and mediæval anti-Achæan view of Homer’s heroes, as given in the Troy Books of the Middle Ages, and yet knew Iliad, Book VII, and admired Odysseus, whom the Ionian tradition abhors? *Troilus and Cressida* is indeed a mystery, but Somebody concerned in it had read Ficinus’ version of the *Alcibiades*; and yet made the monstrous anachronism of dating Aristotle and Plato before the Trojan war. “That was his fun,” as Charles Lamb said in another connection.

Mr. Collins, it is plain, goes much further than the "small Latin" with which his age (like myself) credited Shakespeare. He could read Latin, Mr. Collins thinks, as easily as an educated Briton reads French — that is, as easily as he reads English. Still further, Shakespeare, through Latin translations, was so saturated with the Greek drama "that the characteristics which differentiate his work from the work of his contemporaries and recall in essentials the work of the Greek dramatists are actually attributable to these dramatists."

Ben Jonson, and all the more or less well-taught University wits, as far as I remember, like Greene, Marlowe, and Lyly, do not show much acquaintance with Euripides, Æschylus, Sophocles, and do not often remind us of these masters. Shakespeare does remind us of them — the only question is, do the resemblances arise from his possession of a genius akin to that of Greece, or was his memory so stored with all the treasures of their art that the waters of Helicon kept bubbling up through the wells of Avon?

But does Mr. Collins prove (what, as he admits, *cannot* be demonstrated) that Shakespeare was familiar with the Attic tragedians? He begins by saying that he will not bottom his case "on the ground of parallels in sentiment and reflection, which, as they express commonplaces, are likely to be" (fortuitous) "coincidences." Three pages of such parallels, all from Sophocles, therefore follow. "Curiously close similarities of expression" are also barred. Four pages of examples therefore follow, from Sophocles and Æschylus, plays and fragments, Euripides, and Homer too (once!). Again, "identities of sentiment under similar circumstances" are not to be cited; two pages *are* cited; and "similarities, however striking they may be in metaphorical expression," cannot safely be used; several pages of them follow.

Finally, Mr. Collins chooses a single play, the *Aias* of Sophocles, and tests Shakespeare by that, unluckily in part from *Titus Andronicus*, which Mr. Greenwood regards (usually) as non-Shakespearean, or not by his unknown great author. *Troilus and Cressida*, whatever part Shakespeare may have had in it, does suggest to me that the author or authors knew of Homer no more than the few books of the Iliad, first translated by Chapman and published in 1598. But

he or they did know the *Aias* of Sophocles, according to Mr. Collins: so did the author of *Romeo and Juliet*.

Now all these sorts of parallels between Shakespeare and the Greeks are, Mr. Collins tells us, not to count as proofs that Shakespeare knew the Greek tragedians. "We have obviously to be on our guard" against three kinds of such parallels, which "may be mere coincidences," fortuitous coincidences. But these coincidences against which "we must be on our guard" fill sixteen pages (p–63). These pages must necessarily produce a considerable effect in the way of persuading the reader that Shakespeare knew the Greek tragedians as intimately as Mr. Collins did. Mr. Greenwood is obliged to leave these parallels to readers of Mr. Collins's essay. Indeed, what more can we do? Who would read through a criticism of each instance? Two or three may be given. The Queen in *Hamlet* reminds that prince, grieving for his father's death, that "all that live must die":

"That loss is common to the race,
And common is the commonplace."

The Greek Chorus offers the commonplace to Electra, — and here is a parallel! Again, two Greeks agree with Shakespeare that anxious expectation of evil is worse than actual experience thereof. Greece agrees with Shakespeare that ill-gotten gains do not thrive, or that it is not lucky to be "a corby messenger" of bad news; or that all goes ill when a man acts against his better nature; or that we suffer most from the harm which we bring on ourselves; or that there is strength in a righteous cause; or that blood calls for blood (an idea common to Semites, Greeks, and English readers of the Bible); or that, having lost a very good man, you will not soon see his like again, — and so on as long as you please. Of such wisdom are proverbs made, and savages and Europeans have many parallel proverbs. *Vestigia nulla retrorsum* is as well known to Bushmen as to Latinists. Manifestly nothing in this kind proves, or even suggests, that Shakespeare was saturated in Greek tragedy. But page on page of

such facts as that both Shakespeare and Sophocles talk, one of "the belly-pinched wolf," the other of "the empty-bellied wolf," are apt to impress the reader — and verily both Shakespeare and Æschylus talk of "the heart dancing for joy." Mr. Collins repeats that such things are no proof, but he keeps on piling them up. It was a theory of Shakespeare's time that the apparent ghost of a dead man might be an impersonation of him by the devil. Hamlet knows this —

"The spirit that I have seen may be the devil."

Orestes (*Electra*, Euripides) asks whether it may not be an avenging dæmon (*alastor*) in the shape of a god, that bids him avenge his father. Is Shakespeare borrowing from Euripides, or from a sermon, or any contemporary work on ghosts, such as that of Lavater?

A girl dies or is sacrificed before her marriage, and characters in *Romeo and Juliet*, and in Euripides, both say that Death is her bridegroom. Anyone might say that, anywhere, as in the Greek Anthology —

"For Death not for Love hast thou loosened thy zone."

One needs the space of a book wherein to consider such parallels. But confessedly, though a parade is made of them, they do not prove that Shakespeare constantly read Greek tragedies in Latin translations.

To let the truth out, the resemblances are mainly found in such commonplaces: as when both Aias and Antony address the Sun of their latest day in life; or when John of Gaunt and Aias both pun on their own names.

The situations, in *Hamlet* and the *Choephoræ* and *Electra*, are so close that resemblances in some passages must and do occur, and Mr. Collins does not comment specially upon the closest resemblance of all: the English case is here the murder of Duncan, the Greek is the murder of Agamemnon.

Now it would be easy for me to bring forward many close parallels between Homer and the old Irish epic story of Cuchulainn, between Homer and *Beowulf* and the Njal's saga, yet Norsemen and the early Irish were not students of Homer! The parallel passages in Homer, on one side, and the Old Irish *Tain Bo Cualgne*, and the Anglo-Saxon epics, are so numerous and close that the theory

of borrowing from Homer has actually occurred to a distinguished Greek scholar. But no student of Irish and Anglo-Saxon heroic poetry has been found, I think, to suggest that Early Irish and Anglo-Saxon Court minstrels knew Greek. The curious may consult Mr. Munro Chadwick's *The Heroic Age* (1912), especially Chapter XV, "The Common Characteristics of Teutonic and Greek Heroic Poetry," and to what Mr. Chadwick says much might be added.

But, to be short, Mr. Collins's case can only be judged by readers of his most interesting *Studies in Shakespeare*. To me, Hamlet's soliloquy on death resembles a fragment from the *Phœnix* of Euripides no more closely than two sets of reflections by great poets on the text that "of death we know nothing" are bound to do, — though Shakespeare's are infinitely the richer. For Shakespeare's reflections on death, save where Christians die in a Christian spirit, are as agnostic as those of the post-Æschylean Greek and early Anglo-Saxon poets. In many respects, as Mr. Collins proves, Shakespeare's highest and deepest musings are Greek in tone. But of all English poets he who came nearest to Greece in his art was Keats, who of Greek knew nothing. In the same way, a peculiar vein of Anglo-Saxon thought, in relation to Destiny and Death, is purely Homeric, though necessarily unborrowed; nor were a native Fijian poet's lines on old age, *sine amore jocisque*, borrowed from Mimnermus! There is such a thing as congruity of genius. Mr. Collins states the hypothesis — not his own— "that *by a certain natural affinity* Shakespeare caught also the accent and tone as well as some of the most striking characteristics of Greek tragedy."

Though far from accepting most of Mr. Collins's long array of Greek parallels, I do hold that by "natural affinity," by congruity of genius, Shakespeare approached and resembled the great Athenians.

One thing seems certain to me. If Shakspere read and borrowed from Greek poetry, he knew it as well (except Homer) as Mr. Collins knew it; and remembered what he knew with Mr. Collins's extraordinary tenacity of memory.

Now if "Shakespeare" did all that, he was not the actor. The author, on Mr. Collins's showing, must have been a very sedulous and diligent student of Greek

poetry, above all of the drama, down to its fragments. The Baconians assuredly ought to try to prove, from Bacon's works, that he was such a student.

Mr. Collins, "a violent Stratfordian," overproved his case. If his proofs be accepted, Shakspere the actor knew the Greek tragedians as well as did Mr. Swinburne. If the author of the plays were so learned, the actor was not the author, in my opinion — he *was*, in the opinion of Mr. Collins.

If Shakespeare's spirit and those of Sophocles and Æschylus meet, it is because they move on the same heights, and thence survey with "the poet's sad lucidity" the same "pageant of men's miseries." But how dissimilar in expression Shakespeare can be, how luxuriant and apart from the austerity of Greece, we observe in one of Mr. Collins's parallels.

Polynices, in the *Phœnissæ* of Euripides (504–506), exclaims:

"To the stars' risings, and the sun's I'd go,
And dive 'neath earth, — if I could do this thing, —
Possess Heaven's highest boon of sovereignty."

Then compare Hotspur:

"By Heaven, methinks it were an easy leap
To pluck bright honour from the pale faced moon,
Or dive into the bottom of the deep,
Where fathom-line could never touch the ground,
And pluck up drownèd honour by the locks,
So he that doth redeem her thence, might wear
Without corrival all her dignities."

What a hurrying crowd of pictures rush through Hotspur's mind! Is Shakespeare thinking of the *Phœnissæ*, or is he speaking only on the promptings of his genius?

V. SHAKESPEARE, GENIUS, AND SOCIETY

A phrase has been used to explain the Greek element in Shakespeare's work, namely, "congruity of genius," which is apt to be resented by Baconians. Perhaps they have a right to resent it, for "genius" is hard to define, and genius is invoked by some wild wits to explain feats of Shakespeare's which (to Baconians) appear "miracles." A "miracle" also is notoriously hard to define; but we may take it ("under all reserves") to stand for the occurrence of an event, or the performance of an action which, to the speaker who applies the word "miracle," seems "impossible." The speaker therefore says, "The event is impossible; miracles do not happen: therefore the reported event never occurred. The alleged performance, the writing of the plays by the actor, was impossible, was a miracle, therefore was done by some person or persons other than the actor." This idea of the *impossibility* of the player's authorship is the foundation of the Baconian edifice.

I have, to the best of my ability, tried to describe Mr. Greenwood's view of the young provincial from Warwickshire, Will Shakspere. If Will were what Mr. Greenwood thinks he was, then Will's authorship of the plays seems to me, "humanly speaking," impossible. But then Mr. Greenwood appeared to omit from his calculations the circumstance that Will *may* have been, not merely "a sharp boy" but a boy of great parts; and not without a love of stories and poetry: a passion which, in a bookless region, could only be gratified through folk-song, folk-tale, and such easy Latin as he might take the trouble to read. If we add to these very unusual but not wholly impossible tastes and abilities, that Will *may* have been a lad of genius, there is no more "miracle" in his case than in other supreme examples of genius. "But genius cannot work miracles, cannot do what is impossible." Do what is impossible to whom? To the critics, the men of common sense.

Alas, all this way of talking about "miracles," and "the impossible," and "genius" is quite vague and popular. What do we mean by "genius"? The Latin

term originally designates, not a man's everyday intellect, but a spirit from without which inspires him, like the "Dæmon," or, in Latin, "Genius" of Socrates, or the *lutin* which rode the pen of Molière. "Genius" is claimed for Shakespeare in an inscription on his Stratford monument, erected at latest some six years after his death. Following this path of thought we come to "inspiration": the notion of it, as familiar to Australian savages as to any modern minds, is that, to the poet, what he produces is *given* by some power greater than himself, by the *Boilyas* (spirits) or Pundjel, the Father of all. This palæolithic psychology, of course, is now quite discredited, yet the term "genius" is still (perhaps superstitiously) applied to the rare persons whose intellectual faculties lightly outrun those of ordinary mortals, and who do marvels with means apparently inadequate.

In recent times some philosophers, like Mr. F. W. H. Myers, put — in place of the Muses or the *Boilyas*, or the Genius — what they call the "Subliminal Self," something "far more deeply interfused than the everyday intellect." This subconscious self, capable of far more than the conscious intelligence, is genius.

On the other side, genius may fairly be regarded as faculty, only higher in degree, and not at all different in kind, from the everyday intellect which, for example, pens this page.

Thus as soon as we begin to speak of "genius," we are involved in speculations, psychological, psychical, physical, and metaphysical; in difficulties of all sorts not at present to be solved either by physiological science or experimental psychology, or by psychical research, or by the study of heredity. When I speak of "the genius of Shakespeare," of Jeanne d'Arc, of Bacon, even of Wellington, I possibly have a meaning which is not in all respects the meaning of Mr. Greenwood, when he uses the term "genius"; so we are apt to misunderstand each other. Yet we all glibly use the term "genius," without definition and without discussion.

At once, too, in this quest, we jostle against "that fool of a word," as Napoleon said, "impossible." At once, on either side, we assume that we know what is possible and what is impossible, — and so pretend to omniscience.

Thus some "Stratfordians," or defenders of the actor's authorship, profess to know — from all the signed work of Bacon, and from all that has reached us about Bacon's occupations and preoccupations, from 1590 to 1605 — that the theory of Bacon's authorship of the plays is "impossible." I, however, do not profess this omniscience.

On the other side the Baconian, arguing from all that *he* knows, or thinks he knows, or can imagine, of the actor's education, conditions of life, and opportunities, argues that the authorship of the actor is "impossible."

Both sides assume to be omniscient, but we incontestably know much more about Bacon, in his works, his aims, his inclinations, and in his life, than we know about the actor; while about "the potentialities of genius," we know — very little.

Thus, with all Bacon's occupations and preoccupations, he had, the Baconians will allow, *genius*. By the miracle of genius he *may* have found time and developed inclination, to begin by furbishing up older plays for a company of actors: he did it extremely well, but what a quaint taste for a courtier and scholar! The eccentricities of genius *may* account for his choice of a "*nom de plume*," which, if he desired concealment, was the last that was likely to serve his turn. He may also have divined all the Doll Tearsheets and Mrs. Quicklys and Pistols, whom, conceivably, he did not much frequent.

I am not one of those who deny that Bacon might have written *Hamlet* "if he had the mind," as Charles Lamb said of Wordsworth. Not at all; I am the last to limit the potentialities of genius.

But suppose, merely for the sake of argument, that Will Shakspere too had genius in that amazing degree which, in *Henry V*, the Bishop of Ely and the Archbishop of Canterbury describe and discuss in the case of the young king. In this passage we perceive that the poet had brooded over and been puzzled by the "miracle" (he uses the word) of genius. Says Canterbury speaking of the Prince's wild youth,

"Never was such a sudden scholar made."

One Baconian objection to Shakespeare's authorship is that during his early years in London (say 1587–92) he was "such a sudden scholar made" in various things.

The young king's

"addiction was to courses vain,
His companies unletter'd, rude, and shallow,"

precisely like Shakespeare's courses and companions at Stratford

"Had never noted in him any study."

Stratford tradition, a century after Shakespeare left the town, did not remember "any study" in him; none had been "noted," nor could have been remembered. To return to Henry, he shines in divinity, knowledge of "commonwealth affairs,"

"You would say, it hath been all in all his study."

He is as intimate with the art of war; to him "Gordian knots of policy" are "familiar as his garter." He *must* have

"The art and practic part of life,"

as "mistress to this theorie,"

"Which is a wonder how his Grace should glean it,"

as his youth was riotous, and was lived in all men's gaze,

"And never noted in him any study,
Any retirement, any sequestration
From open haunts and popularity."

The Bishop of Ely can only suggest that Henry's study or "contemplation"

"Grew like the summer grass, fastest by night,
Unseen,"

and Canterbury says

"It must be so, for miracles are ceased."

And thus the miracle of genius baffles the poet, for Henry's had been "noisy nights," notoriously noisy.

Now, as we shall later show, Bacon's rapid production of the plays, considering his other contemporary activities and varied but always absorbing interests, was as much a miracle as the sudden blossoming of Henry's knowledge and accomplishments; for all Bacon's known exertions and occupations, and his deepest and most absorbing interest, were remote from the art of tragedy and comedy. If we are to admit the marvel of genius in Bacon, of whose life and pursuits we know much, by parity of reasoning we may grant that the actor, of whom we know much less, may have had genius: had powers and could use opportunities in a way for which Baconians make no allowance.

We now turn to Mr. Greenwood's chapter, "Shakespeare and 'Genius.'" It opens with the accustomed list of poor Will's disqualifications, "a boy born of illiterate parents," but we need not rehearse the list. He "comes to town" (date unknown) "a needy adventurer"; in 1593 appeared the poem *Venus and Adonis*, author's name being printed as "W. Shakespeare." Then comes *Lucrece* (1594). In 1598 *Love's Labour's Lost*, printed as "corrected and augmented" by "W. Shakespere." And so on with all the rest. Criticism of the learning and splendour of the two poems follows. To *Love's Labour's Lost*, and the amusing things written about it by Baconians, I return; and to Shakespeare's "impossible" knowledge of courtly society, his "polish and urbanity," his familiar acquaintance with contemporary French politics, foreign proverbs, and "the gossip of the Court" of Elizabeth: these points are made by His Honour Judge Webb.

All this lore to Shakespeare is "impossible" — he could not read, say some Baconians, or had no Latin, or had next to none; on these points I have said my say. The omniscient Baconians know that all the early works ascribed to the actor were impossible, to a man of, say thirty — who *was* no more, and *knew* no more, than they know that the actor was and knew; and as for "Genius," it cannot work miracles. Genius "bestows upon no one a knowledge of facts,"

"Shakespeare, however favoured by nature, could impart only what he had learned."

Precisely, but genius as I understand it (and even cleverness) has a way of acquiring knowledge of facts where the ordinary "dull intelligent man" gains none. Keen interest, keen curiosity, swift observation, even the power of tearing out the things essential from a book, the gift of rapid reading; the faculty of being alive to the fingertips, — these, with a tenacious memory, may enable a small boy to know more facts of many sorts than his elders and betters and all the neighbours. They are puzzled, if they make the discovery of his knowledge. Scott was such a small boy; whether we think him a man of genius or not. Shakspere, even the actor, was, perhaps, a man of genius, and possessed this power of rapid acquisition and vivid retention of all manner of experience and information. To what I suppose to have been his opportunities in London, I shall return. Meanwhile, let the doubter take up any popular English books of Shakespeare's day: he will find them replete with much knowledge wholly new to him — which he will also find in Shakespeare.

A good example is this: Judge Webb proclaimed that in points of scientific lore (the lore of that age) Shakespeare and Bacon were much on a level. Professor Tyrrell, in a newspaper, said that the facts staggered him, as a "Stratfordian." A friend told me that he too was equally moved. I replied that these pseudoscientific "facts" had long been commonplaces. Pliny was a rich source of them. Professor Dowden took the matter up, with full knowledge, and reconverted Mr. Tyrrell, who wrote: "I am not versed in the literature of the Shakespearian era, and I assumed that the Baconians who put forward the parallelisms had satisfied themselves that the coincidences were peculiar to the writings of the philosopher and the poet. Professor Dowden has proved that this is not so."

Were I to enter seriously on this point of genius, I should begin by requesting my adversaries to read Mr. F. W. H. Myers's papers on "The Mechanism of Genius" (in his *Human Personality*), and to consider the humble problem of "Calculating Boys," which is touched on also by Cardinal Newman. How do

they, at the age of innocence, arrive at their amazing results? How did the child Pascal, ignorant of Euclid, work out the Euclidean propositions of "bars and rounds," as he called lines and circles? Science has no solution!

Transport the problem into the region of poetry and knowledge of human nature, take Will in place of Pascal and Gauss, and (in manners and matter of war) Jeanne d'Arc; — and science, I fancy, is much to seek for a reply.

Mr. Greenwood considers, among others, the case of Robert Burns. The parallel is very interesting, and does not, I think, turn so much to Mr. Greenwood's advantage as he supposes. The genius of Burns, of course, is far indeed below the level of that of the author of the Shakespearean plays. But that author and Burns have this in common with each other (and obviously with Homer), that their work arises from a basis of older materials, already manipulated by earlier artists. Burns almost always has a key-note already touched, as confessedly in the poems of his predecessor, Fergusson; of Hamilton of Gilbertfield; in songs, popular or artistic, and so forth. He "alchemised" his materials, as Mr. Greenwood says of his author of the plays; turned dross into gold, brick into marble. Notoriously much Shakespearean work is of the same nature.

The education of Burns he owed to his peasant father, to his parish school (in many such schools he might have acquired Latin and Greek; in fact he did not), to a tutor who read with him some English and French; and he knew a modernised version of Blind Harry's *Wallace*; Locke's *Essay*; *The Spectator*, novels of the day, and vernacular Scots poets of his century, with a world of old Scots songs. These things, and such as these, were Burns's given literary materials. He used them in the only way open to him, in poems written for a rural audience, and published for an Edinburgh public. No classical, no theatrical materials were given; or, if he read the old drama, he could not, in his rural conditions, and in a Scotland where the theatre was in a very small way, venture on producing plays, for which there was no demand, while he had no knowledge of the Stage. Burns found and filled the only channels open to him, in a printed book, and in music books for which he transmuted old songs.

The bookish materials offered to Will, in London, were crammed with reminiscences from the classics, were mainly romantic and theatrical; and, from his profession of actor, by far the best channel open to him was the theatre. Badly as it paid the outside author, there was nothing that paid better. *Venus and Adonis* brought "more praise than pudding," if one may venture a guess. With the freedom of the theatre Will could soar to all heights and plumb all depths. No such opportunity had Burns, even if he could have used it, and, owing to a variety of causes, his spirit soon ceased to soar high or wing wide.

I take Shakespeare, in London at least, to have read the current Elizabethan light literature — *Euphues*, Lyly's Court comedies, novels full of the classics and of social life; Spenser, Sidney — his *Defence of Poesy*, and *Arcadia* (1590) — with scores of tales translated from the Italian, French, and Spanish, all full of foreign society, and discourses of knights and ladies. He saw the plays of the day, perhaps as one of "the groundlings." He often beheld Society, from without, when acting before the Queen and at great houses. He had thus, if I am right, sufficient examples of style and manner, and knowledge of how the great were supposed (in books) to comport and conduct themselves. The books were cheap, and could be borrowed, and turned over at the booksellers' stalls. The Elizabethan style was omnipresent. Suppose that Shakespeare was a clever man, a lover of reading, a rapid reader with an excellent memory, easily influenced, like Burns, by what he read, and I really think that my conjectures are not too audacious. Not only "the man in the street," but "the reading public" (so loved by Coleridge), have not the beginning of a guess as to the way in which a quick man reads. Watch them poring for hours over a newspaper! Let me quote what Sir Walter Raleigh says: "Shakespeare was one of those swift and masterly readers who know what they want of a book; they scorn nothing that is dressed in print, but turn over the pages with a quick discernment of all that brings them new information, or jumps with their thought, or tickles their fancy. Such a reader will have done with a volume in a few minutes, yet what he has taken from it he keeps for years. He is a live man; and is sometimes judged by slower wits to be a learned man."

I am taking Shakespeare to have been a reader of this kind, as was Dr. Johnson, as are not a few men who have no pretensions to genius. The accomplishment is only a marvel to — well, I need not be particular about the kind of person to whom it is a marvel!

Here, in fairness, the reader should be asked to consider an eloquent passage of comparison between the knowledge of Burns and of Will, quoted by Mr. Greenwood from Mr. Morgan.

Genius, says Mr. Morgan, "did not guide Burns's untaught pen to write of Troy or Egypt, of Athens and Cyprus." No! that was not Burns's lay; nor would he have found a public had he emulated the contemporary St. Andrews professor, Mr. Wilkie, who wrote *The Epigoniad*, and sang of Cadmeian Thebes, to the delight of David Hume, his friend. The public of 1780–90 did not want new epics of heroic Greece from Mossgiel; nor was the literature accessible to Burns full of the mediæval legends of Troy and Athens. But the popular literature accessible to Will was full of the *mediæval* legends of Thebes, Troy, and Athens; and of these, *not* of Homer, Will made his market. Egypt he knew only in the new English version of Plutarch's *Lives*; of Homer, he (or the author of *Troilus and Cressida*) used only Iliad VII., in Chapman's new translation (1598). For the rest he had Lydgate (perhaps), and, certainly, Caxton's *Destruction of Troy*, still reprinted as a *popular* book as late as 1713. Will did not, as Mr. Morgan says, "reproduce the very counterfeit civilisations and manners of nations born and buried and passed into history a thousand years before he had been begotten. . . " He bestowed the manners of mediæval chivalrous romance on his Trojans and Greeks. He accommodated prehistoric Athens with a Duke. He gave Scotland cannon three hundred years too early; and made Cleopatra play at billiards. Look at his notion of "the very manners" of early post-Roman Britain in *Cymbeline* and *King Lear*! Concerning "the anomalous status of a King of Scotland under one of its primitive Kings" the author of *Macbeth* knew no more than what he read in Holinshed; of the actual truth concerning Duncan (that old prince was, in fact, a young man slain in a blacksmith's bothy), and of the whole affair, the author knew nothing but a

tissue of sophisticated legends. The author of the plays had no knowledge (as Mr. Morgan inexplicably declares that he had) of "matters of curious and occult research for antiquaries or dilettanti to dig out of old romances or treaties or statutes rather than for historians to treat of or schools to teach!"

Mon Dieu! do historians *not* treat of "matters of curious research" and of statutes and of treaties? As for "old romances," they were current and popular. The "occult" sources of *King Lear* are a popular tale attached to legendary "history" and a story in Sidney's *Arcadia*. Will, whom Mr. Morgan describes as "a letterless peasant lad," or the Author, whoever he was, is not "invested with all the love" (*sic*, *v.1.* "lore"), "which the ages behind him had shut up in clasped books and buried and forgotten."

"Our friend's style has flowery components," Mr. Greenwood adds to this deliciously eloquent passage from his American author, "and yet Shakespeare who did all this," *et cætera*. But Shakespeare did *not* do "all this"! We know the sources of the plays well enough: novels in one of which "Delphos" is the insular seat of an oracle of Apollo; Holinshed, with his contaminated legends; North's *Plutarch*, done out of the French; older plays, and the rest of it. Shakespeare does not go to Tighernach and the *Hennskringla* for Macbeth; or for Hamlet to the saga which is the source of Saxo; or for his English chronicle-plays to the State Papers. Shakespeare did not, like William of Deloraine, dig up "clasped books, buried and forgotten." There is no original research; the author uses the romances, novels, ballads, and popular books of uncritical history which were current in his day. Mr. Greenwood knows that; Mr. Morgan, perhaps, knew it, but forgot what he knew; hurried away by the Muse of Eloquence. And the common Baconian may believe Mr. Morgan.

But Mr. Greenwood asks "what was the poetic output?" in Burns's case. It was what we know, and *that* was what suited his age and his circumstances. It was lyric, idyll, song, and satire; it was not drama, for to the Stage he had no access, he who passed but one winter in Edinburgh, where the theatre was not the centre of literature.

Shakespeare came, with genius and with such materials as I have suggested, to an entirely different market, the Elizabethan theatre. I have tried to show how easily his mind might be steeped in the all-pervading classicism and foreign romance of the period, with the wide, sketchy, general information, the commonly known fragments from the great banquet of the classics, — with such history, wholly uncritical, as Holinshed and Stow, and other such English chroniclers, could copiously provide; with the courtly manners mirrored in scores of romances and Court plays; and in the current popular *Morte d'Arthur* and *Destruction of Troy*.

I can agree with Mr. Greenwood, when he says that "Genius is a potentiality, and whether it will ever become an actuality, and what it will produce, depends upon the moral qualities with which it is associated, and the opportunities that are open to it — in a word, on the circumstances of its environment."

Of course by "moral qualities," a character without spot or stain is not intended: we may take that for granted. Otherwise, I agree; and think that Shakespeare of Stratford had genius, and that what it produced was in accordance with the opportunities open to it, and with "the circumstances of its environment." Without the "environment," no Jeanne d'Arc, — without the environment, no Shakespeare.

To come to his own, Shakespeare needed the environment of "the light people," the crowd of wits living from hand to mouth by literature, like Greene and Nash; and he needed that pell-mell of the productions of their pens: the novels, the poems, the pamphlets, and, above all, the plays, and the wine, the wild talk, the wit, the travellers' tales, the seamen's company, the vision of the Court, the gallants, the beauties; and he needed the People, of whom he does not speak in the terms of such a philanthropist as Bacon professedly was. Not as an aristocrat, a courtier, but as a simple literary man, William does not like, though he thoroughly understands, the mob. Like Alceste (in *Le Misanthrope* of Poquelin), he might say,

"*L'Ami du genre humain n'est point du tout mon fait*."

In London, not in Stratford, he could and did find his mob. This reminds one to ask, how did the Court-haunting, or the study-haunting, or law-court, and chamber of criminal examination-rooms haunting Bacon make acquaintance with Mrs. Quickly, and Doll Tearsheet, and drawers, and carters, and Bardolph, and Pistol, and copper captains, and all Shakespeare's crowd of people hanging loose on the town?

It is much easier to discover how Shakespeare found the tone and manners of courtly society (which, by the way, are purely poetic and conventional), than to find out where Bacon got his immense knowledge of what is called "low life."

If you reply, as regards Bacon, "his genius divined the Costards and Audreys, the Doll Tearsheets and tapsters, and drawers, and Bardolphs, and carters, from a hint or two, a glance," I answer that Will had much better sources for *them* in his own experience of life, and had conventional poetic sources for his courtiers — of whom, in the quick, he saw quite as much as Molière did of his *Marquis*.

But one Baconian has found out a more excellent way of accounting for Bacon's pictures of rude rustic life, and he is backed by Lord Penzance, that aged Judge. The way is short. These pictures of rural life and character were interpolated into the plays of Bacon by his collaborator, William Shakspere, actor, "who prepared the plays for the stage." This brilliant suggestion is borrowed from Mr. Appleton Morgan.

Thus have these two Baconians perceived that it *is* difficult to see how Bacon obtained his knowledge of certain worlds and aspects of character which he could scarcely draw "from the life." I am willing to ascribe miracles to the genius of Bacon; but the Baconians cited give the honour to the actor, "who prepared the plays for the stage."

Take it as you please, my Baconian friends who do not believe as I believe in "Genius." Shakespeare and Molière did not live in "Society," though both rubbed shoulders with it, or looked at it over the invisible barrier between the actor and the great people in whose houses or palaces he takes the part of Entertainer. The rest they divined, by genius.

Bacon did not, perhaps, study the society of carters, drawers, Mrs. Quickly, and Doll Tearsheet; of copper captains and their boys; not at Court, not in the study, did he meet them. How then did he create his multitude of very low-lived persons? Rustics and rural constables he *may* have lovingly studied at Gorhambury, but for his collection of other very loose fish Bacon must have kept queer company. So you have to admit "Genius," — the miracle of "Genius" in your Bacon, — to an even greater extent than I need it in the case of my Will; or, like Lord Penzance, you may suggest that Will collaborated with Bacon.

Try to imagine that Will was a born poet, like Burns, but with a very different genius, education, and environment. Burns could easily get at the Press, and be published: that was impossible for Shakespeare at Stratford, if he had written any lyrics. Suppose him to be a poet, an observer, a wit, a humorist. Tradition at Stratford says something about the humorist, and tradition, *in similar circumstances*, would have remembered no more of Burns, after the lapse of seventy years.

Imagine Will, then, to have the nature of a poet (that much I am obliged to assume), and for nine or ten years, after leaving school at thirteen, to hang about Stratford, observing nature and man, flowers and foibles, with thoughts incommunicable to Sturley and Quiney. Some sorts of park-palings, as he was married at eighteen, he could not break so lightly as Burns did, — some outlying deer he could not so readily shoot at, perhaps, but I am not surprised if he assailed other deer, and was in troubles many. Unlike Burns, he had a keen eye for the main chance. Everything was going to ruin with his father; school-mastering, if he tried it (I merely follow tradition), was not satisfactory. His opinion of dominies, if he wrote the plays, was identical with that frequently expressed, in fiction and privately, by Sir Walter Scott.

Something must be done! Perhaps the straitest Baconian will not deny that companies of players visited Stratford, or even that he may have seen and talked with them, and been attracted. He was a practical man, and he made for London, and, by tradition, we first find him heading straight for the theatre, holding

horses at the door, and organising a small brigade of boys as his deputies. According to Ben Jonson he shone in conversation; he was good company, despite his rustic accent, that terrible bar! The actors find that out; he is admitted within the house as a "servitor" — a call-boy, if you like; an apprentice, if you please.

By 1592, when Greene wrote his *Groatsworth*, "Shakescene" thinks he can bombast out a blank verse with the best; he is an actor, he is also an author, or a furbisher of older plays, and, as a member of the company, is a rival to be dreaded by Greene's three author friends: whoever they were, they were professional University playwrights; the critics think that Marlowe, so near his death, was one of them.

Will, supposing him to come upon the town in 1587, has now had, say, five years of such opportunities as were open to a man connected with the stage. Among these, in that age, we may, perhaps, reckon a good deal of very mixed society — writing men, bookish young blades, young blades who haunt the theatre, and sit on the stage, as was the custom of the gallants.

What follows? Chaff follows, a kind of intimacy, a supper, perhaps, after the play, if an actor seems to be good company. This is quite natural; the most modish young gallants are not so very dainty as to stand aloof from any amusing company. They found it among prize-fighters, when Byron was young, and extremely conscious of the fact that he was a lord. Moreover there were no women on the stage to distract the attention of the gallants. The players, says Asinius Lupus, in Jonson's *Poetaster*, "corrupt young gentry very much, I know it." I take the quotation from Mr. Greenwood. They could not corrupt the young gentry, if they were not pretty intimate with them. From Ben's *Poetaster*, which bristles with envy of the players, Mr. Greenwood also quotes a railing address by a copper captain to Histrio, a poor actor, "There are some of you players honest, gentlemanlike scoundrels, and suspected to ha' some wit, as well as your poets, both at drinking and breaking of jests; *and are companions for gallants*. A man may skelder ye, now and then, of half a dozen shillings or so."

We think of Nigel Olifaunt in *The Fortunes of Nigel*; but better gallants might choose to have some acquaintance with Shakespeare.

To suppose that young men of position would not form a playhouse acquaintanceship with an amusing and interesting actor seems to me to show misunderstanding of human nature. The players were, when unprotected by men of rank, "vagabonds." The citizens of London, mainly Puritans, hated them mortally, but the young gallants were not Puritans. The Court patronised the actors who performed Masques in palaces and great houses. The wealth and splendid attire of the actors, their acquisition of land and of coats of arms infuriated the sweated playwrights. Envy of the actors appears in the Cambridge "Parnassus" plays of *c.* 1600–2. In the mouth of Will Kempe, who acted Dogberry in Shakespeare's company, and was in favour, says Heywood, with Queen Elizabeth, the Cambridge authors put this brag: "For Londoners, who of more report than Dick Burbage and Will Kempe? He is not counted a gentleman that knows not Dick Burbage and Will Kempe." It is not my opinion that Shakespeare was, as Ben Jonson came to be, as much "in Society" as is possible for a mere literary man. I do not, in fancy, see him wooing a Maid of Honour. He was a man's man, a peer might be interested in him as easily as in a jockey, a fencer, a tennis-player, a musician, *que sçais-je*? Southampton, discovering his qualities, may have been more interested, interested in a better way.

In such circumstances which are certainly in accordance with human nature, I suppose the actor to have been noticed by the young, handsome, popular Earl of Southampton; who found him interesting, and interested himself in the poet. There followed the dedication to the Earl of *Venus and Adonis*; a poem likely to please any young amorist (1693).

Mr. Greenwood cries out at the audacity of a player dedicating to an Earl, without even saying that he has asked leave to dedicate. The mere fact that the dedication was accepted, and followed by that of *Lucrece*, proves that the Earl did not share the surprise of Mr. Greenwood. He, conceivably, will argue that the Earl knew the real concealed author, and the secret of the pseudonym. But of the hypothesis of such a choice of a pseudonym, enough has been said.

Whatever happened, whatever the Earl knew, if it were discreditable to be dedicated to by an actor, Southampton was discredited; for we are to prove that all in the world of letters and theatre who have left any notice of Shakespeare identified the actor with the poet.

This appears to me to be the natural way of looking at the affair. But, says Mr. Greenwood, of this intimacy or "patronage" of Southampton "not a scrap of evidence exists." Where would Mr. Greenwood expect to find a scrap of evidence? In literary anecdote? Of contemporary literary anecdote about Shakespeare, as about Beaumont, Dekker, Chapman, Heywood, and Fletcher, there is none, or next to none. There is the tradition that Southampton gave the poet £1000 towards a purchase to which he had a mind. (Rowe seems to have got this from Davenant, — through Betterton.) In what documents would the critic expect to find a scrap of evidence? Perhaps in Southampton's book of his expenditure, and that does not exist. It is in the accounts of Prince Charlie that I find him, poor as he was, giving money to Jean Jacques Rousseau.

As to the chances of an actor's knowing "smart people," Heywood, who knew all that world, tells us that "Tarleton, in his time, was gracious with the Queen, his sovereign," Queen Elizabeth. "Will Kempe was in the favour of his sovereign."

They had advantages, they were not literary men, but low comedians. I am not pretending that, though his

"flights upon the banks of Thames
So did take Eliza and our James,"

Will Shakspere "was gracious with the Queen."

We may compare the dedication of the Folio of 1623; here two players address the Earls of Pembroke and Montgomery. They have the audacity to say nothing about having asked and received permission to dedicate. They say that the Earls "have prosecuted both the plays and their authour living" (while in life) "with much favour." They "have collected and published the works of 'the

dead' . . . only to keep alive the memory of so worthy a Friend, and Fellow" (associate) "as was our Shakespeare, 'your servant Shakespeare.'"

Nothing can possibly be more explicit, both as to the actor's authorship of the plays, and as to the favour in which the two Earls held him. Mr. Greenwood supposes that Jonson wrote the Preface, which contains an allusion to a well-known ode of Horace, and to a phrase of Pliny. Be that as it may, the Preface signed by the two players speaks to Pembroke and Montgomery. To *them* it cannot lie; *they* know whether they patronised the actor or not; whether they believed, or not, that the plays were their "servant's." How is Mr. Greenwood to overcome this certain testimony of the Actors, to the identity of their late "Fellow" the player, with the author; and to the patronage which the Earls bestowed on him and his compositions? Mr. Greenwood says nothing except that we may reasonably suppose Ben to have written the dedication which the players signed.

Whether or not the two Earls had a personal knowledge of Shakespeare, the dedication does not say in so many words. They had seen his plays and had "favoured" both him and them, with so much favour, had "used indulgence" to the author. That is not nearly explicit enough for the precise Baconians. But the Earls knew whether what was said were true or false. I am not sure whether the Baconians regard them as having been duped as to the authorship, or as fellow-conspirators with Ben in the great Baconian joke and mystery — that "William Shakespeare" the author is not the actor whose Stratford friend, Collyns, has his name written in legal documents as "William Shakespeare."

Anyone, however, may prefer to believe that, while William Shakspere was acting in a company (1592–3), Bacon, or who you please, wrote *Venus and Adonis*, and, signing "W. Shakspeare," dedicated it to his young friend, the Earl, promising to add "some graver labour," a promise fulfilled in *Lucrece*. In 1593, Bacon was chiefly occupied, we shall see, with the affairs of a young and beautiful Earl — the Earl of Essex, not of Southampton: to Essex he did not dedicate his two poems (if *Venus* and *Lucrece* were his). He "did nothing but

ruminate" (he tells the world) on Essex. How Mr. Greenwood's Unknown was occupied in 1593–4, of course we cannot possibly be aware.

I have thus tried to show that Will Shakspere, if he had as much schooling as I suggest; and if he had four or five years of life in London, about the theatre, and, above all, had genius, might, by 1592, be the rising player-author alluded to as "Shakescene." There remains a difficulty. By 1592 Will had not time to be guilty of *thirteen* plays, or even of six. But I have not credited him with the authorship, between, say, 1587 and 1593, of eleven plays, namely, *Hamlet*, *Romeo and Juliet*, *Midsummer Night's Dream*, *Titus Andronicus*, *Comedy of Errors*, *Love's Labour's Lost*, *King John*, the three plays of *Henry VI*, and *The Taming of the Shrew*. Mr. Greenwood cites Judge Webb for the fact that between the end of 1587 and the end of 1592 "some half-dozen Shakespearean dramas had been written," and for Dr. Furnivall's opinion that eleven had been composed.

If I believed that half a dozen, or eleven Shakespearean plays, as we have them, had been written or composed, between 1587 and 1592, I should be obliged to say that, in my opinion, they were not composed, in these five years, by Will. Mr. Greenwood writes, "Some of the dates are disputable"; and, for himself, would omit "*Titus Andronicus*, the three plays of *Henry VI*, and possibly also *The Taming of the Shrew*, while the reference to *Hamlet* also is, as I have elsewhere shown, of very doubtful force." This leaves us with six of Dr. Furnivall's list of earliest plays put out of action. The miracle is decomposing, but plays numerous enough to stagger my credulity remain.

I cannot believe that the author even of the five plays before 1592–3 was the ex-butcher's boy. Meanwhile these five plays, written by somebody before 1593, meet the reader on the threshold of Mr. Greenwood's book with Dr. Furnivall's eleven; and they fairly frighten him, if he be a "Stratfordian." "Will, even Will," says the Stratfordian, "could not have composed the five, much less the eleven, much less Mr. Edwin Reed's thirteen 'before 1592.'" But, at the close of his work Mr. Greenwood reviews and disbands that unlucky troop of thirteen Shakespearean plays "before 1592" as mustered by Mr. Reed, a

Baconian of whom Mr. Collins wrote in terms worthy of *feu* Mr. Bludyer of *The Tomahawk*.

From the five plays left to Shakespeare's account in , *King John* (as we know it) is now eliminated. "I find it impossible to believe that the same man was the author of the drama" (*The Troublesome Reign of King John*) "published in 1591, and that which, so far as we know, first saw the light in the Folio of 1623 . . . Hardly a single line of the original version reappears in the *King John* of Shakespeare." "I think it is a mistake to endeavour to fortify the argument against him" (my Will, *toi que j'aime*), "by ascribing to Shakespeare such old plays as the *King John* of 1591 or the primitive *Hamlet*."

I thought so too, when I read , and saw *King John* apparently still "coloured on the card" among "Shakespeare's lot." We are now left with *Love's Labour's Lost*, *Midsummer Night's Dream*, *Comedy of Errors*, and *Romeo and Juliet*, out of Dr. Furnivall's list of plays up to 1593. The phantom force of miraculously early plays is "following darkness like a dream." We do not know the date of *A Midsummer Night's Dream*, we do not know the date of *Romeo and Juliet*. Mr. Gollancz dates the former "about 1592," and the latter "at 1591." This is a mere personal speculation. Of *Love's Labour's Lost*, we only know that our version is one "corrected and augmented" by William Shakespeare in 1598. I dare say it is as early as 1591–2, in its older form. Of *The Comedy of Errors*, Mr. Collins wrote, "It is all but certain that it was written between 1589 and 1592, and it is quite certain that it was written before the end of 1594."

The legion of Shakespearean plays of date before 1593 has vanished. The miracle is very considerably abated. In place of introducing the airy hosts of plays before 1592, in , it would have been, perhaps, more instructive to write that, as far as we can calculate, Shakespeare's earliest trials of his pinions as a dramatist may be placed about 1591–3. There would then have been no specious appearance of miracles to be credited by Stratfordians to Will. But even so, we have sufficient to "give us pause," says Mr. Greenwood, with justice. It gives *me* "pause," if I am to believe that, between 1587 and 1592, Will wrote *Love's Labour's Lost*, *The Comedy of Errors*, *A Midsummer Night's Dream*, and *Romeo*

and Juliet. There is a limit even to my gullibility, and if anyone wrote all these plays, as we now possess them, before 1593, I do not suppose that Will was the man. But the dates, in fact, are unknown: the miracle is apocryphal.

VI. THE COURTLY PLAYS: "LOVE'S LABOUR'S LOST"

We now come to consider another "miracle" discovered in the plays, — a miracle if the actor be the author. The new portent is the courtliness and refinement (too often, alas! the noblest ladies make the coarsest jokes) and wit of the speeches of the noble gentlemen and ladies in the plays. To be sure the refinement in the jests is often conspicuously absent. How could the rude actor learn his quips and pretty phrases, and farfetched conceits? This question I have tried to answer already, — the whole of these fashions abound in the literature of the day.

Here let us get rid of the assumption that a poet could not make the ladies and gentlemen of his plays converse as they do converse, whether in quips and airs and graces, or in loftier style, unless he himself frequented their society. Marlowe did not frequent the best society; *he* was no courtier, but there is the high courtly style in the speeches of the great and noble in *Edward II*. Courtiers and kings never did speak in this manner, any more than they spoke in blank verse. The style is a poetical convention, while the quips and conceits, the airs and graces, ran riot through the literature of the age of Lyly and his *Euphues* and his comedies, the age of the *Arcadia*.

A cheap and probable source of Will's courtliness is to be found in the courtly comedies of John Lyly, five of which were separately printed between 1584 and 1592. Lyly's "real significance is that he was the first to bring together on the English stage the elements of high comedy, thereby preparing the way for Shakespeare's *Much Ado about Nothing* and *As You Like It*" (and *Love's Labour's Lost*, one may add). "Whoever knows his Shakespeare and his Lyly well can hardly miss the many evidences that Shakespeare had read Lyly's plays almost as closely as Lyly had read Pliny's *Natural History*. . . . One could hardly imagine *Love's Labour's Lost* as existent in the period from 1590 to 1600, had not Lyly's work just preceded it."

"It is to Lyly's plays," writes Dr. Landmann, "that Shakespeare owes so much in the liveliness of his dialogues, in smartness of expression, and especially in that predilection for witticisms, quibbles, and playing upon words which he shows in his comedies as well as in his tragedies." There follows a dissertation on the affected styles of Guevara and Gongora, of the *Pléiade* in France, and generally of the artificial manner in Europe, till in England we reach Lyly, "in whose comedies," says Dr. Furness, "I think we should look for motives which appeared later in Shakespeare."

The Baconians who think that a poet could not derive from books and court plays his knowledge of fashions far more prevalent in literature than at Court, decide that the poet of *Love's Labour's Lost* was not Will, but the courtly "concealed poet." No doubt Baconians may argue with Mr. R. M. Theobald that "Bacon wrote Marlowe," and, by parity of reasoning many urge, though Mr. Theobald does not, that Bacon wrote Lyly, pouring into Lyly's comedies the grace and wit, the quips and conceits of his own courtly youth. "What for no?" The hypothesis is as good as the other hypotheses, "Bacon wrote Marlowe," "Bacon wrote Shakespeare."

The less impulsive Baconians and the Anti-Willians appear to ignore the well-known affected novels which were open to all the world, and are noted even in short educational histories of English literature. Shakespeare, in London, had only to look at the books on the stalls, to read or, if he had the chance, to see Lyly's plays, and read the poems of the time. I am taking him not to be a dullard but a poet. It was not hard for him, if he were a poet of genius, not only to catch the manner of Lyly's Court comedies, and "Marlowe's mighty line" (Marlowe was not "brought up on the knees of Marchionesses"!), but to improve on them. People did not commonly talk in the poetical way, heaven knows; people did not write in the poetic convention. Certainly Queen Mary and Queen Elizabeth talked and wrote, as a rule (we have abundance of their letters), like women of this world. There is a curious exception in Letter VIII of the Casket Letters from Mary to Bothwell. In this (we have a copy of the original French), Mary plunges into the affected and figured style already practised by

Les Précieuses of her day; and expands into symbolisms in a fantastic jargon. If courtiers of both sexes conversed in the style of *Euphues* (which is improbable), they learned the trick of it from *Euphues*; not the author of *Euphues* from them. Lyly's most popular prose was accessible to Shakespeare. The whole convention as to how the great should speak and bear themselves was accessible in poetry and the drama. A man of genius naturally made his ladies and courtiers more witty, more "conceited," more eloquent, more gracious than any human beings ever were anywhere, in daily life.

It seems scarcely credible that one should be obliged to urge facts so obvious against the Baconian argument that only a Bacon, intimately familiar with the society of the great, could make the great speak as, in the plays, they do — and as in real life they probably did *not*!

We now look at *Love's Labour's Lost*, published in quarto, in 1598, as "corrected and augmented by W. Shakespere." The date of composition is unknown, but the many varieties of versification, with some allusions, mark it as among the earliest of the dramas. Supposing that Shakespeare obtained his knowledge of fine manners and speech, and of the tedious quips and conceits which he satirises, from the contemporary poems, plays, and novels which abounded in them, and from *précieux* and *précieuses* who imitated them, as I suggest, even then *Love's Labour's Lost* is an extremely eccentric piece. I cannot imagine how a man who knew the foreign politics of his age as Bacon did, could have dreamed of writing anything so eccentric, that is, if it has any connection with foreign politics of the time.

The scene is the Court of *Ferdinand*, King of Navarre. In 1589–93, the eyes of England were fixed on the Court of her ally, *Henri* of Navarre, in his struggle with the League and the Guises; the War of Religion. But the poet calls the King "Ferdinand," taking perhaps from some story this non-existent son of Charles III of Navarre (died 1425): to whom, according to Monstrelet, the Burgundian chronicler of that time, the French king owed 200,000 ducats of gold. This is a transaction of the early fifteenth century, and leads to the presence of the princess of France as an envoy at the Court of Navarre in the

play; the whole thing is quite unhistorical, and has the air of being borrowed from some lost story or brief novel. Bacon's brother, Anthony, was English minister at the Court of Navarre. What could tempt Bacon to pick out a non-historical King Ferdinand of Navarre, plant him in the distant days of Jeanne d'Arc, and make him, at that period, found an Academe for three years of austere study and absence of women? But, if Bacon did this, what could induce him to give to the non-existent Ferdinand, as companions, the Maréchal de Biron with de Longueville (both of them, in 1589–93, the chief adherents of Henri of Navarre), and add to them "Dumain," that is, the Duc de Mayenne, one of the Guises, the deadly foes of Henri and of the Huguenots? Even in the unhistorically minded Shakespeare, the freak is of the most eccentric, — but in Bacon this friskiness is indeed strange. I cannot, like Mr. Greenwood, find any "allusions to the Civil War of France." France and Navarre, in the play, are in full peace.

The actual date of the fabulous King Ferdinand would have been about 1430. By introducing Biron, Longueville, and the Duc de Mayenne, and Bankes's celebrated educated horse, the author shifts the date to 1591. But the Navarre of the play is a region "out of space, out of time," a fairy world of projected Academes (like that of the four young men in de la Primaudaye's *L'Académie Française*, Englished in 1586) and of peace, while the actual King of Navarre of 1591 was engaged in a struggle for life and faith; and in his ceaseless amours.

Many of Shakespeare's anachronisms are easily intelligible. He takes a novel or story about any remote period, or he chooses, as for the *Midsummer Night's Dream*, a period earlier than that of the Trojan war. He gives to the Athens contemporary with the "Late Minoan III" period (1600 B.C.?) a Duke, and his personages live like English nobles and rustics of his own day, among the fairies of English folk-lore. It is the manner of Chaucer and of the poets and painters of any age before the end of the eighteenth century. The resulting anachronisms are natural and intelligible. We do not expect war-chariots in *Troilus and Cressida*; it is when the author makes the bronze-clad Achæans familiar with Plato and Aristotle that we are surprised. In *Love's Labour's Lost* we do not

expect the author to introduce the manners of the early fifteenth century, the date of the affair of the 200,000 ducats. Let the play reflect the men and manners of 1589–93, — but why place Mayenne, a fanatical Catholic foe of Navarre, among the courtiers of the Huguenot King of Navarre?

As for de Mayenne (under the English spelling of the day Dumain) appearing as a courtier of his hated adversary Henri, Bacon, of all men, could not have made that absurd error. It was Shakespeare who took but an absent-minded interest in foreign politics. If Bacon is building his play on an affair, the ducats, of 1425–35 (roughly speaking), he should not bring in a performing horse, trained by Bankes, a Staffordshire man, which was performing its tricks at Shrewsbury — in 1591. Thus early we find that great scholar mixing up chronology in a way which, in Shakespeare even, surprises; but, in Bacon, seems quite out of keeping.

Shakespeare, as Sir Sidney Lee says, gives Mayenne as "Dumain," — Mayenne, "whose name was so frequently mentioned in popular accounts of French affairs in connection with Navarre's movements that Shakespeare was led to number him also among his supporters." Bacon would not have been so led! As Mayenne and Henri fought against each other at Ivry, in 1590, this was carrying nonsense far, even for Will, but for the earnestly instructive Bacon!

"The habits of the author could not have been more scholastic," so Judge Webb is quoted, "if he had, like Bacon, spent three years in the University of Cambridge . . . " Bacon, or whoever corrected the play in 1598, might have corrected "primater" into "pia mater," unless Bacon intended the blunder for a malapropism of "Nathaniel, a Curate." Either Will or Bacon, either in fun or ignorance, makes Nathaniel turn a common Italian proverb on Venice into gibberish. It was familiar in Florio's *Second Frutes* (1591), and *First Frutes* (1578), with the English translation. The books were as accessible to Shakspere as to Bacon. Either author might also draw from James Sandford's *Garden of Pleasure*, done out of the Italian in 1573–6.

Where the scholastic habits of Bacon at Cambridge are to be discovered in this play, I know not, unless it be in Biron's witty speech against study. If the

wit implies in the author a Cambridge education, Costard and Dull and Holofernes imply familiarity with rustics and country schoolmasters. Where the author proves that he "could not have been more familiar with French politics if, like Bacon, he had spent three years in the train of an Ambassador to France," I cannot conjecture. *There are no French politics in the piece*, any more than there are "mysteries of fashionable life," such as Bacon might have heard of from Essex and Southampton. There is no "familiarity with all the gossip of the Court"; there is no greater knowledge of foreign proverbs than could be got from common English books. There is abundance, indeed overabundance of ridicule of affected styles, and quips, with which the literature of the day was crammed: call it Gongorism, Euphuism, or what you please. One does not understand how or where Judge Webb (in extreme old age) made all these discoveries, sympathetically quoted by Mr. Greenwood. "Like Bacon, the author of the play must have had a large command of books; he must have had his "Horace," his "Ovidius Naso," and his "good old 'Mantuan.'" What a prodigious "command of books"! Country schoolmasters confessedly had these books on the school desks. It was not even necessary for the author to "have access to the *Chronicles* of Monstrelet." It is not known, we have said, whether or not such plot as the play possesses, with King Ferdinand and the 100,000 ducats, or 200,000 ducats (needed to bring the Princess and the mythical King Ferdinand of Navarre together), were not adapted by the poet from an undiscovered *conte*, partly based on a passage in Monstrelet.

Perhaps it will be conceded that *Love's Labour's Lost* is not a play which can easily be attributed to Bacon. We do not know how much of the play existed before Shakespeare "augmented" it in 1598. We do not know whether what he then corrected and augmented was an early work of his own or from another hand, though probably it was his own. Molière certainly corrected and augmented and transfigured, in his illustrious career in Paris, several of the brief early sketches which he had written when he was the chief of a strolling *troupe* in Southern France.

Mr. Greenwood does not attribute the wit (such as it is), the quips, the conceits, the affectations satirised in *Love's Labour's Lost*, to Will's knowledge of the artificial style then prevalent in all the literatures of Western Europe, and in England most pleasingly used in Lyly's comedies. No, "the author must have been not only a man of high intellectual culture, but one who was intimately acquainted with the ways of the Court, and the fashionable society of his time, as also with contemporary foreign politics."

I search the play once more for the faintest hint of knowledge of foreign politics. The embassy of the daughter of the King of France (who, by the date of the affair of the ducats, should be Charles VII) has been compared to a diplomatic sally of the mother of the childless actual King of France (Henri III), in 1586, when Catherine de Medici was no chicken. I do not see in the embassy of the Princess of the story any "intimate acquaintance with contemporary foreign politics" about 1591–3. The introduction of Mayenne as an adherent of the King of Navarre, shows either a most confused ignorance of foreign politics on the part of the author, or a freakish contempt for his public. I am not aware that the author shows any "intimate acquaintance with the ways" of Elizabeth's Court, or of any other fashionable society, except the Courts which Fancy held in plays.

Mr. Greenwood appears to be repeating "the case as to this very remarkable play" as "well summed up by the late Judge Webb in his *Mystery of William Shakespeare*" (). In that paralysing judicial summary, as we have seen, "the author could not have been more familiar with French politics if, like Bacon, he had spent three years in the train of an Ambassador to France." The French politics, in the play, are to send the daughter of a King of France (the contemporary King Henri III was childless) to conduct a negotiation about 200,000 ducats, at the Court, steeped in peace, of a King of Navarre, a scholar who would fain be a recluse from women, in an Academe of his own device. Such was not the Navarre of Henri in his war with the Guises, and Henri did not shun the sex!

Such are the “contemporary foreign politics,” the “French politics” which the author knows — as intimately as Bacon might have known them. They are not foreign politics, they are not French politics, they are politics of fairy-land: with which Will was at least as familiar as Bacon.

These, then, are the arguments in favour of Bacon, or the Great Unknown, which are offered with perfect solemnity of assurance: and the Baconians repeat them in their little books of popularisation and propaganda. *Quantula sapientia*!

VII. CONTEMPORARY RECOGNITION OF WILL AS AUTHOR

It is absolutely impossible to prove that Will, or Bacon, or the Man in the Moon, was the author of the Shakespearean plays and poems. But it is easy to prove that Will was recognised as the author, by Ben Jonson, Heywood, and Heminge and Condell the actors, to take the best witnesses. Meanwhile we have received no hint that any man except Will was ever suspected of being the author till 1856, when the twin stars of Miss Delia Bacon and Mr. Smith arose. The evidence of Ben Jonson and the rest can only prove that professed playwrights and actors, who knew Will both on and off the stage, saw nothing in him not compatible with his work. Had he been the kind of letterless country fellow, or bookless fellow whom the Baconians and Mr. Greenwood describe, the contemporary witnesses cited must have detected Will in a day; and the story of the "Concealed Poet" who really, at first, did the additions and changes in the Company's older manuscript plays, and of the inconceivably impudent pretences of Will of Stratford, would have kept the town merry for a month. Five or six threadbare scholars would have sat down at a long table in a tavern room, and, after their manner, dashed off a Comedy of Errors on the real and the false playwright.

Baconians never seem to think of the mechanical difficulties in their assumed literary hoax. If Will, like the old Hermit of Prague who never saw pen and ink, could not even write, the hoax was a physical impossibility. If he could write, but was a rough bookless man, his condition would be scarcely the more gracious, even if he were able to copy in his scrawl the fine Roman hand of the concealed poet. I am surprised that the Baconians have never made that point. Will's "copy" was almost without blot or erasion, the other actors were wont to boast. Really the absence of erasions and corrections is too easily explained on the theory that Will was *not* the author. Will merely copied the fair copies handed to him by the concealed poet. The farce was played for some twenty

years, and was either undetected or all concerned kept the dread secret — and all the other companies and rival authors were concerned in exposing the imposture.

The whole story is like the dream of a child. We therefore expect the Anti-Willians to endeavour to disable the evidence of Jonson, Heywood, Heminge, and Condell. Their attempts take the shape of the most extravagant and complex conjectures; with certain petty objections to Ben's various estimates of the *merits* of the plays. He is constant in his witness to the authorship. To these efforts of despair we return later, when we hope to justify what is here deliberately advanced.

Meanwhile we study Mr. Greenwood's attempts to destroy or weaken the testimony of contemporary literary allusions, in prose or verse, to the plays as the work of the actor. Mr. Greenwood rests on an argument which perhaps could only have occurred to legal minds, originally, perhaps to the mind of Judge Webb, not in the prime vigour of his faculties. Not very many literary allusions remain, made during Will's life-time, to the plays of Shakespeare. The writers, usually, speak of "Shakespeare," or "W. Shakespeare," or "Will Shakespeare," and leave it there. In the same way, when they speak of other contemporaries, they name them, — and leave it there, without telling us "who" (Frank) Beaumont, or (Kit) Marlowe, or (Robin) Greene, or (Jack) Fletcher, or any of the others "were." All interested readers knew who they were: and also knew who "Shakespeare" or "Will Shakespeare" was. No other Will Shak(&c.) was prominently before the literary and dramatic world, in 1592–1616, except the Warwickshire provincial who played with Burbage.

But though the mere names of the poets, Ben Jonson, Kit Marlowe, Frank Beaumont, Harry Chettle, and so forth, are accepted as indicating the well-known men whom they designate, this evidence to identity does not satisfy Mr. Greenwood, and the Baconians, where Will is concerned. "We should expect to find allusions to dramatic and poetical works published under the name of 'Shakespeare'; we should expect to find Shakespeare spoken of as a poet and a dramatist; we should expect, further, to find some few allusions to Shakespeare or Shakspere the player. And these, of course, we do find; but these are not the

objects of our quest. What we require is evidence to establish the identity of the player with the poet and dramatist; to prove that the player was the author of the *Plays* and *Poems*. *That* is the proposition to be established, and *that* the allusions fail, as it appears to me, to prove," says Mr. Greenwood. He adds, "At any rate they do not disprove the theory that the true authorship was hidden under a pseudonym" — which raises an entirely different question.

Makers of allusions to the plays must identify Shakespeare with the actor, explicitly; must tell us who this Shakespeare was, though they need not, and usually do not, tell us who the other authors mentioned were; and though the world of letters and the Stage knew but one William Shakspere or Shakespeare, who was far too familiar to them to require further identification. But even if the makers of allusions did all this, and said, "by W. Shakespeare the poet, we mean W. Shakespeare the actor" — *that* is not enough. For they may all be deceived, may all believe that a bookless, untutored man is the author. So we cannot get evidence correct enough for Mr. Greenwood.

Destitute as I am of legal training, I leave this notable way of disposing of the evidence to the judgement of the Bench and the Bar, a layman intermeddleth not with it. Still, I am, like other readers, on the Jury addressed, — I do not accept the arguments. *Miror magis*, as Mr. Greenwood might quote Latin. We have already seen one example of this argument, when Heywood speaks of the author of poems by Shakespeare, published in *The Passionate Pilgrim*. Heywood does nothing to identify the actor Shakspere with the author Shakespeare, says Mr. Greenwood. I shall prove that, elsewhere, Heywood does identify them, and no man knew more of the world of playwrights and actors than Heywood. I add that in his remarks on *The Passionate Pilgrim*, Heywood had no need to say "by W. Shakespeare I mean the well-known actor in the King's Company." There was no other William Shakspere or Shakespeare known to his public.

It is to no purpose that Mr. Greenwood denies, as we have seen above, that the allusions "disprove the theory that the true authorship was hidden under a pseudonym." That is an entirely different question. He is now starting quite another hare. Men of letters who alluded to the plays and poems of William

Shakespeare, meant the actor; that is my position. That they may all have been mistaken: that "William Shakespeare" was Bacon's, or any one's pseudonym, is, I repeat, a wholly different question; and we must not allow the critic to glide away into it through an "at any rate"; as he does three or four times. So far, then, Mr. Greenwood's theory that it was impossible for the actor Shakspere to have been the author of the plays, encounters the difficulty that no contemporary attributed them to any other hand: that none is known to have said, "This Warwickshire man cannot be the author."

"Let us, however, examine some of these allusions to Shakspere, real or supposed," says the critic. He begins with the hackneyed words of the dying man of letters, Robert Greene, in *A Groatsworth of Wit* (1592). The pamphlet is addressed to Gentlemen of his acquaintance "that spend their wits in making plays"; he "wisheth them a better exercise," and better fortunes than his own. (Marlowe is supposed to be one of the three Gentlemen playwrights, but such suppositions do not here concern us.) Greene's is the ancient feud between the players and the authors, between capital and labour. The players are the capitalists, and buy the plays out and out, — cheap. The author has no royalties; and no control over the future of his work, which a Shakspere or a Bacon, a Jonson or a Chettle, or any handyman of the company owning the play, may alter as he pleases. It is highly probable that the actors also acquired most of the popular renown, for, even now, playgoers have much to say about the players in a piece, while they seldom know the name of the playwright. Women fall in love with the actors, not with the authors; but with "those puppets," as Greene says, "that speake from our mouths, these anticks, garnished in our colours." Ben Jonson, we shall see, makes some of the same complaints, — most natural in the circumstances: though he managed to retain the control of his dramas; how, I do not know. Greene adds that in his misfortunes, illness, and poverty, he is ungratefully "forsaken," by the players, and warns his friends that such may be *their* lot; advising them to seek "some better exercise." He then writes — and his meaning cannot easily be misunderstood, I think, but misunderstood it has been— "Yes, trust them not" (trust not the players), "FOR there is an upstart

crow, beautified with our feathers, that with his *Tyger's heart wrapt in a Player's hide*" ("Player's" in place of "woman's," in an old play, *The Tragedy of Richard*, *Duke of York*, &c.), "supposes he is as well able to bumbast out a blank verse as the best of you; and being an absolute *Johannes Factotum*, is in his own conceit the only Shake-scene in a country."

The meaning is pellucid. "Do not trust the players, my fellow playwrights, for the reasons already given, for they, in addition to their glory gained by mouthing *our* words, and their ingratitude, may now forsake you for one of themselves, a player, who thinks his blank verse as good as the best of yours" (including Marlowe's, probably). "The man is ready at their call" ("an absolute *Johannes Factotum*"). "In his own conceit" he is "the only Shake-scene in a country." "Seek you better masters," than these players, who have now an author among themselves, "the only Shake-scene," where the pun on Shakespeare does not look like a fortuitous coincidence. But it may be, anything may happen.

The sense, I repeat, is pellucid. But Mr. Greenwood writes that if Shake-scene be an allusion to Shakespeare "it seems clear that it is as an actor rather than as an author he is attacked." As an *actor* the person alluded to is merely assailed with the other actors, his "fellows." But he is picked out as presenting another and a new reason why authors should distrust the players, "*for* there is" among themselves, "in a player's hide," "an upstart crow" — who thinks his blank verse as good as the best of theirs. He is, therefore, necessarily a playwright, and being a *factotum*, can readily be employed by the players to the prejudice of Greene's three friends, who are professed playwrights.

Mr. Greenwood says that "we do not know why Greene should have been so particularly bitter against the players, and why he should have thought it necessary so seriously to warn his fellow playwrights against them." But we cannot help knowing; for Greene has told us. In addition to gaining renown solely through mouthing "*our*" words, wearing "*our* feathers," they have been bitterly ungrateful to Greene in his poverty and sickness; they will, in the same circumstances, as cruelly forsake his friends; "yes, for they now have" an author,

and to the playwrights a dangerous rival, in their own fellowship. Thus we know with absolute certainty why Greene wrote as he did. He says nothing about the superior financial gains of the players, which Mr. Greenwood suspects to have been the "only" cause of his bitterness. Greene gives its causes in the plainest possible terms, as did Ben Jonson later, in his verses "Poet-Ape" (Playwright-Actor). Moreover, Mr. Greenwood gives Greene's obvious motives on the very page where he says that we do not know them.

Even Mr. Greenwood, anxious as he is to prove Shake-scene to be attacked as an actor, admits that the words "supposes himself as well able to bumbast out a blank verse as the best of you," "do seem to have that implication," namely, that "Shake-scene" is a dramatic author: what else can the words mean; why, if not for the Stage, should Shake-scene write blank verse?

Finally Mr. Greenwood, after saying "it is clear that it is as an actor rather than as an author that 'Shake-scene' is attacked," concedes that it "certainly looks as if he" (Greene) "meant to suggest that this Shake-scene supposed himself able to compose, as well as to mouth verses." Nothing else can possibly be meant. "The rest of you" were authors, not actors.

If not, why, in a whole company of actors, should "Shake-scene" alone be selected for a special victim? Shake-scene is chosen out because, as an author, a factotum always ready at need, he is more apt than the professed playwrights to be employed as author by his company: this is a new reason for not trusting the players.

I am not going to take the trouble to argue as to whether, in the circumstances of the case, "Shake-scene" is meant by Greene for a pun on "Shakespeare," or not. If he had some other rising player-author, the Factotum of a cry of players, in his mind, Baconians may search for that personage in the records of the stage. That other player-author may have died young, or faded into obscurity. The term "the only Shake-scene" may be one of those curious coincidences which do occur. The presumption lies rather on the other side. I demur, when Mr. Greenwood courageously struggling for his case says that, even assuming the validity of the surmise that there is an allusion to Shakspere, "the utmost that we

should be entitled to say is that Greene here accuses Player Shakspere of putting forward, as his own, some work, or perhaps some parts of a work, for which he was really indebted to another" (the Great Unknown?). I do more than demur, I defy any man to exhibit that sense in Greene's words.

"The utmost that we should be entitled to say," is, in my opinion, what we have no shadow of a title to say. Look at the poor hackneyed, tortured words of Greene again. "Yes, trust them not; for there is an upstart crow, beautified with our feathers, that with his *Tyger's heart wrapped in a player's hide*, supposes he is as well able to bumbast out a blank verse as the best of you; and being an absolute *Johannes Factotum*, is in his own conceit the only Shake-scene in a country."

How can mortal man squeeze from these words the charge that "Player Shakspere" is "putting forward, as his own, some work, or perhaps some parts of a work, for which he was really indebted to another"? It is as an actor, with other actors, that the player is "beautified with *our* feathers," — not with the feathers of some one *not* ourselves, Bacon or Mr. Greenwood's Unknown. Mr. Greenwood even says that Shake-scene is referred to "as beautified with the feathers *which he has stolen* from the dramatic writers" ("our feathers").

Greene says absolutely nothing about feathers "*which he has stolen*." The "feathers," the words of the plays, were bought, not stolen, by the actors, "anticks garnished in our colours."

Tedious it is to write many words about words so few and simple as those of Greene; meaning "do not trust the players, for one of them writes blank verse which he thinks as good as the best of yours, and fancies himself the only Shake-scene in a country."

But "Greene here accuses Player Shakspere of putting forward, as his own, some work, or perhaps some parts of a work, for which he was really indebted to another," this is "the utmost we should be entitled to say," even if the allusion be to Shakspere. How does Mr. Greenwood get the Anti-Willian hypothesis out of Greene's few and plain words?

It is much safer for him to say that "Shake-scene" is not meant for Shakespeare. Nobody can prove that it *is*; the pun *may* be a strange coincidence, — or any one may say that he thinks it nothing more; if he pleases.

Greene nowhere "refers to this Shake-scene as being an impostor, an upstart crow beautified with the feathers *which he has stolen from the dramatic writers* ("our feathers")" — that is, Greene makes no such reference to Shake-scene in his capacity of writer of blank verse. Like all players, who are all "anticks garnisht in our colours," Shake-scene, *as player*, is "beautified with our feathers." It is Mr. Greenwood who adds "beautified with the feathers which he has *stolen* from the dramatic writers." Greene does not even remotely hint at plagiarism on the part of Shake-scene: and the feathers, the plays of Greene and his friends, were not stolen but bought. We must take Greene's evidence as we find it, — it proves that by "Shake-scene" he means a "poet-ape," a playwright-actor; for Greene, like Jonson, speaks of actors as "apes." Both men saw in a certain actor and dramatist a suspected rival. Only one such successful practising actor-playwright is known to us at this date (1592–1601), — and he is Shakespeare. Unless another such existed, Greene, in 1592, alludes to William Shak(&c.) as a player and playwright. This proves that the actor from Stratford was accepted in Greene's world as an author of plays in blank verse. He cannot, therefore, have seemed incapable of his poetry.

Let us now briefly consider other contemporary allusions to Shakespeare selected by Mr. Greenwood himself. No allusion can prove that Shakespeare was the author of the work attributed to him in the allusions. The plays and poems *may* have been by James VI and I, "a parcel-poet." The allusions can prove no more than that, by his contemporaries, Shakespeare was believed to be the poet, which is impossible if he were a mere rustic ignoramus, as the Baconians aver. Omitting some remarks by Chettle on Greene's *Groatsworth of Wit*, as, if grammar goes for all, they do not refer to Shakespeare, we have the Cambridge farce or comedy on contemporary literature, the *Return from Parnassus* (1602?). The University wits laugh at Shakespeare, — not an

university man, as the favourite poet, in his *Venus and Adonis*, of a silly braggart pretender to literature, Gullio.

They also introduce Kempe, the low comedy man of Shakespeare's company, speaking to Burbage, the chief tragic actor, of Shakespeare as a member of their company, who, *as an author of plays*, "puts down" the University wits "and Ben Jonson too." The date is not earlier than that of Ben's satiric play on the poets, *The Poetaster* (1601), to which reference is made. Since Kempe is to be represented as wholly ignorant, his opinion of Shakespeare's pre-eminent merit only proves, as in the case of Gullio, that the University wits decried the excellences of Shakespeare. In him they saw no scholar.

The point is that Kempe recognises Shakespeare as both actor and author.

All this "is quite consistent with the theory that Shakespeare was a pseudonym," says Mr. Greenwood. Of course it is, but it is *not* consistent with the theory that Shakespeare was an uneducated, bookless rustic, for, in that case, his mask would have fallen off in a day, in an hour. Of course the Cambridge author only proves, if you will, that *he* thought that *Kempe* thought, that his fellow player was the author. But we have better evidence of what the actors thought than in the Cambridge play.

In 1598, as we saw, Francis Meres in *Palladis Tamia* credits Shakespeare with *Venus and Adonis*, with privately circulated sonnets, and with a number of the comedies and tragedies. How the allusions "negative the hypothesis that Shakespeare was a *nom de plume* is not apparent," says Mr. Greenwood, always constant to his method. I repeat that he wanders from the point, which is, here, that the only William Shak(&c.) known to us at the time, in London, was credited with the plays and poems on all sides, which proves that no incompatibility between the man and the works was recognised.

Then Weaver (1599) alludes to him as author of *Venus*, *Lucrece*, *Romeo*, *Richard*, "more whose names I know not." Davies (1610) calls him "our English Terence" (the famous comedian), and mentions him as having "played some Kingly parts in sport." Freeman (1614) credits him with *Venus* and *Lucrece*. "Besides in plays thy wit winds like Meander." I repeat Heywood's

evidence. Thomas Heywood, author of that remarkable domestic play, *A Woman Killed with Kindness*, was, from the old days of Henslowe, in the fifteen-nineties, a playwright and an actor; he survived into the reign of Charles I. Writing on the familiar names of the poets, "Jack Fletcher," "Frank Beaumont," "Kit Marlowe," "Tom Nash," he says,

"Mellifluous Shakespeare whose enchanting quill
Commanded mirth and passion, was but 'Will.'"

Does Heywood not identify the actor with the author? No quibbles serve against the evidence.

We need not pursue the allusions later than Shakespeare's death, or invoke, at present, Ben Jonson's panegyric of 1623. As to Davies, his dull and obscure epigram is addressed "To our English Terence, Mr. Will Shakespeare." He accosts Shakespeare as "Good Will." He remarks that, "as some say," if Will "had not played some Kingly parts in sport," he had been "a companion for a *King*," and "been a King among the meaner sort." Nobody, now, can see the allusion and the joke. Shakespeare's company, in 1604, acted a play on the Gowrie Conspiracy of 1600. King James suppressed the play after the second night, as, of course, he was brought on the stage throughout the action: and in very droll and dreadful situations. Did Will take the King's part, and annoy gentle King Jamie, "as some say"? Nobody knows. But Mr. Greenwood, to disable Davies's recognition of Mr. Will as a playwright, "Our English Terence," quotes, from Florio's *Montaigne*, a silly old piece of Roman literary gossip, Terence's plays were written by Scipio and Laelius. In fact, Terence alludes in his prologue to the *Adelphi*, to a spiteful report that he was aided by great persons. The prologue may be the source of the fable — that does not matter. Davies might get the fable in Montaigne, and, knowing that some Great One wrote Will's plays, might therefore, in irony, address him as "Our English Terence." This is a pretty free conjecture! In Roman comedy he had only two names known to him to choose from; he took Terence, not Plautus. But if

Davies was in the great Secret, a world of others must have shared *le Secret de Polichinelle*. Yet none hints at it, and only a very weak cause could catch at so tiny a straw as the off-chance that Davies *knew*, and used "Terence" as a gibe.

The allusions, even the few selected, cannot prove that the actor wrote the plays, but do prove that he was believed to have done so, and therefore that he was not so ignorant and bookless as to demonstrate that he was incapable of the poetry and the knowledge displayed in his works. Mr. Greenwood himself observes that a Baconian critic goes too far when he makes Will incapable of writing. Such a Will could deceive no mortal. But does Mr. Greenwood, who finds in the Author of the plays "much learning, and remarkable classical attainments," or "a wide familiarity with the classics," suppose that his absolutely bookless Will could have persuaded his intimates that he was the author of plays exhibiting "a wide familiarity with the classics," or "remarkable classical attainments." The thing is wholly impossible.

I do not remember that a single contemporary allusion to Shakespeare speaks of him as "learned," erudite, scholarly, and so forth. The epithets for him are "sweet," "gentle," "honeyed," "sugared," "honey-tongued" — this is the convention. The tradition followed by Milton, who was eight years of age when Shakespeare died, and who wrote *L'Allegro* just after leaving Cambridge, makes Shakespeare "sweetest Shakespeare, Fancy's child," with "native wood-notes wild"; and gives to Jonson "the *learned* sock." Fuller, like Milton, was born eight years before the death of Shakespeare, namely, in 1608. Like Milton he was a Cambridge man. The First Folio of Shakespeare's works appeared when each of these two bookish men was aged fifteen. It would necessarily revive interest in Shakespeare, now first known as far as about half of his plays went: he would be discussed among lovers of literature at Cambridge. Mr. Greenwood quotes Fuller's remark that Shakespeare's "learning was very little," that, if alive, he would confess himself "to be never any scholar." I cannot grant that Fuller is dividing the persons of actor and author. Men of Shakespeare's generation, such as Jonson, did not think him learned; nor did men of the next generation. If Mr. Collins's view be correct, the men of Shakespeare's and of

Milton's generations were too ignorant to perceive that Shakespeare was deeply learned in the literature of Rome, and in the literature of Greece. Every one was too ignorant, till Mr. Collins came.

VIII. “THE SILENCE OF PHILIP HENSLOWE”

When Shakespeare is mentioned as an author by contemporary writers, the Baconian stratagem, we have seen, is to cry, “Ah, but you cannot prove the author mentioned to be the actor.” We have seen that Meres (1598) speaks of Shakespeare as the leading tragic and comic poet (“Poor poet-ape that would be thought our chief,” quoth Jonson), as author of *Venus and Adonis*, and as a sonneteer. “All this does nothing whatever to support the idea that the Stratford player was the author of the plays and poems alluded to,” says Mr. Greenwood, playing that card again.

The allusions, I repeat, *do* prove that Shak(&c.), the actor, was believed to be the author, till any other noted William Shak(&c.) is found to have been conspicuously before the town. “There is nothing at all to prove that Meres, native of Lincolnshire, had any personal knowledge of Shakespeare.” There is nothing at all to prove that Meres, native of Lincolnshire, had any personal knowledge of nine-tenths of the English authors, famous or forgotten, whom he mentions. “On the question — who was Shakespeare? — he throws no light.” He “throws no light on the question” “who was?” any of the poets mentioned by him, except one, quite forgotten, whose College he names . . . To myself this “sad repeated air,”— “critics who praise Shakespeare do not say *who Shakespeare* was,” — would appear to be, not an argument, but a subterfuge: though Mr. Greenwood honestly believes it to be an argument, — otherwise he would not use it: much less would he repeat it with frequent iteration. The more a man was notorious, as was Will Shakspere the actor, the less the need for any critic to tell his public “who Shakespeare was.”

As Mr. Greenwood tries to disable the evidence when Shakespeare is alluded to as an author, so he tries to better his case when, in the account-book of Philip Henslowe, an owner of theatres, money-lender, pawn-broker, purchaser of plays from authors, and so forth, Shakespeare is *not* mentioned at all. Here is a mystery which, properly handled, may advance the great cause. Henslowe has

notes of loans of money to several actors, some of them of Shakespeare's company, "The Lord Chamberlain's." There is no such note of a loan to Shakespeare. Does this prove that he was not an actor? If so, Burbage was not an actor; Henslowe never names him.

There are notes of payments of money to Henslowe after each performance of any play in one of his theatres. In these notes *the name of Shakespeare is never once mentioned as the author of any play*. How weird! But in *these* notes the names of the authors of the plays acted are never mentioned. Does this suggest that Bacon wrote all these plays?

On the other hand, there are frequent mentions of advances of money to authors who were working at plays for Henslowe, singly, or in pairs, threes, fours, or fives. We find Drayton, Dekker, Chapman, and nine authors now forgotten by all but antiquarians. We have also Ben Jonson (1597), Marston, Munday, Middleton, Webster, and others, authors in Henslowe's pay. *But the same of Shakespeare never appears*. Mysterious! The other men's names, writes Dr. Furness, occur "because they were all writers for Henslowe's theatre, but we must wait at all events for the discovery of some other similar record, before we can produce corresponding memoranda regarding Shaksper" (*sic*) "and his productions."

The natural mind of the ordinary man explains all by saying, "Henslowe records no loans of money to Shakspere the actor, because he lent him no money. He records no payments for plays to Shakespeare the author-actor, because to Henslowe the actor sold no plays." That is the whole explanation of the Silence of Philip Henslowe. If Shakspere did sell a play to Henslowe, why should that financier omit the fact from his accounts? Suppose that the actor was illiterate as Baconians fervently believe, and sold Bacon's plays, what prevented him from selling a play of Bacon's (under his own name, as usual) to Henslowe? To obtain a Baconian reply you must wander into conjecture, and imagine that Bacon forbade the transaction. Then *why* did he forbid it? Because he could get a better price from Shakspere's company? The same cause would produce the same effect on Shakspere himself; whether he were the author, or

were Bacon's, or any man's go-between. On any score but that of money, why was Henslowe good enough for Ben Jonson, Dekker, Heywood, Middleton, and Webster, and not good enough for Bacon, who did not appear in the matter at all, but was represented in it by the actor, Will? As a gentleman and a man of the Court, Bacon would be as much discredited if he were known to sell (for £6 on an average) his noble works to the Lord Chamberlain's Company, as if he sold them to Henslowe.

I know not whether the great lawyer, courtier, scholar, and philosopher is supposed by Baconians to have given Will Shakspere a commission on his sales of plays; or to have let him keep the whole sum in each case. I know not whether the players paid Shakspere a sum down for his (or Bacon's) plays, or whether Will received a double share, or other, or any share of the profits on them, as Henslowe did when he let a house to the players. Nobody knows any of these things.

"If Shakspere the player had been a dramatist, surely Henslowe would have employed him also, like the others, in that behalf." Henslowe would, if he could have got the "copy" cheap enough. Was any one of "the others," the playwrights, a player, holding a share in his company? If not, the fact makes an essential difference, for Shakspere *was* a shareholder. Collier, in his preface to Henslowe's so-called "Diary," mentions a playwright who was bound to scribble for Henslowe only (Henry Porter), and another, Chettle, who was bound to write only for the company protected by the Earl of Nottingham. Modern publishers and managers sometimes make the same terms with novelists and playwrights.

It appears to me that Shakspere's company would be likely, as his plays were very popular, to make the same sort of agreement with him, and to give him such terms as he would be glad to accept, — whether the wares were his own — or Bacon's. He was a keen man of business. In such a case, he would not write for Henslowe's pittance. He had a better market. The plays, whether written by himself, or Bacon, or the Man in the Moon, were at his disposal, and he did not dispose of them to Henslowe, wherefore Henslowe cannot mention him in his accounts. That is all.

Quoting an American Judge (Dr. Stotsenburg, apparently), Mr. Greenwood cites the circumstance that, in two volumes of Alleyn's papers "there is not one mention of such a poet as William Shaksper in his list of actors, poets, and theatrical comrades." If this means that Shakspere is not mentioned by Alleyn among actors, are we to infer that William was not an actor? Even Baconians insist that he was an actor. "How strange, how more than strange," cries Mr. Greenwood, "that Henslowe should make no mention in all this long diary, embracing all the time from 1591 to 1609, of the actor-author . . . No matter. *Credo quia impossibile*!" *Credo* what? and what is *impossible*? Henslowe's volume is no Diary; he does not tell a single anecdote of any description; he merely enters loans, gains, payments. Does Henslowe mention, say, Ben Jonson, *when he is not doing business with Ben*? Does he mention any actor or author except in connection with money matters? Then, if he did no business with Shakspere the actor, in borrowing or lending, and did no business with Shakespeare the author, in borrowing, lending, buying or selling, "How strange, how more than strange" it would be if Henslowe *did* mention Shakespeare! He was not keeping a journal of literary and dramatic jottings. He was keeping an account of his expenses and receipts. He never names Richard Burbage any more than he mentions Shakespeare.

Mr. Greenwood again expresses his views about this dark suspicious mystery, the absence of Shakespeare or Shakspere (or Shak, as you like it), from Henslowe's accounts, if Shak(&c.) wrote plays. But the mystery, if mystery there be, is just as obscure if the actor were the channel through which Bacon's plays reached the stage, for the pretended author of these masterpieces. Shak — was not the man to do all the troking, bargaining, lying, going here and there, and making himself a motley to the view for £0, 0*s.* 0*d.* If he were a sham, a figure-head, a liar, a fetcher-and-carrier of manuscripts, *he would be paid for it*. But he did not deal with Henslowe in his bargainings, and *that* is why Henslowe does not mention him. Mr. Greenwood, in one place, agrees, so far, with me. "Why did Henslowe not mention Shakespeare as the writer of other plays" (than *Titus Andronicus* and *Henry VI*)? "I think the answer is simple enough." (So do

I.) "Neither Shakspere nor 'Shakespeare' ever wrote for Henslowe!" The obvious is perceived at last; and the reason given is "that he was above Henslowe's 'skyline,'" "he" being the Author. We only differ as to *why* the author was above Henslowe's "skyline." I say, because good Will had a better market, that of his Company. I understand Mr. Greenwood to think, — because the Great Unknown was too great a man to deal with Henslowe. If to write for the stage were discreditable, to deal (unknown) with Henslowe was no more disgraceful than to deal with "a cry of players"; and as (unknown) Will did the bargaining, the Great Unknown was as safe with Will in one case as in the other. If Will did not receive anything for the plays from his own company (who firmly believed in his authorship), they must have said, "Will! dost thou serve the Muses and thy obliged fellows for naught? Dost thou give us two popular plays yearly, — gratis?"

Do you not see that, in the interests of the Great Secret itself, Will *had* to take the pay for the plays (pretended his) from somebody. Will Shakspere making his dear fellows and friends a present of two masterpieces yearly was too incredible. So I suppose he did have royalties on the receipts, or otherwise got his money; and, as he certainly did not get them from Henslowe, Henslowe had no conceivable reason for entering Will's name in his accounts.

Such are the reflections of a plain man, but to an imaginative soul there seems to be a brooding mist, with a heart of fire, which half conceals and half reveals the darkened chamber wherein abides "The Silence of Philip Henslowe." "The Silence of Philip Henslowe," Mr. Greenwood writes, "is a very remarkable phenomenon . . . " It is a phenomenon precisely as remarkable as the absence of Mr. Greenwood's name from the accounts of a boot-maker with whom he has never had any dealings.

"If, however, there was a man in high position, 'a concealed poet,'" who "took the works of others and rewrote and transformed them, besides bringing out original plays of his own . . . then it is natural enough that his name should not appear among those [of the] for the most part impecunious dramatists to whom Henslowe paid money for playwriting." Nothing can be more natural,

and, in fact, the name of Bacon, or Southampton, or James VI, or Sir John Ramsay, or Sir Walter Raleigh, or Sir Fulke Greville, or any other "man in high position," does *not* appear in Henslowe's accounts. Nor does the name of William Shak(&c.). But why should it not appear if Will sold either his own plays, or those of the noble friend to whom he lent his name and personality — to Henslowe? Why not?

Then consider the figure, to my mind impossible, of the great "concealed poet" "of high position," who can "bring out original plays of his own," and yet "takes the works of others," say of "sporting Kyd," or of Dekker and Chettle, and such poor devils, — *takes* them as a Yankee pirate-publisher takes my rhymes, — and "rewrites and transforms them."

Bacon (or Bungay) *cannot* "take" them without permission of their legal owners, — Shakspere's or any other company; — of any one, in short, who, as Ben Jonson says, "buys up reversions of old plays." How is he to manage these shabby dealings? Apparently he employs Will Shakspere, spells his own "*nom de plume*" "Shakespeare," and has his rewritings and transformations of the destitute author's work acted by Will's company. What a situation for Bacon, or Sir Fulke Greville, or James VI, or any "man in high position" whom fancy can suggest! The plays by the original authors, whoever they were, could only be obtained by the "concealed poet" and "man in high position" from the legal owners, Shakspere's company, usually. The concealed poet had to negotiate with the owners, and Bacon (or whoever he was) employed that scamp Will Shakspere, first, I think, to extract the plays from the owners, and then to pretend that he himself, even Will, had "rewritten and transformed them."

What an associate was our Will for the concealed poet; how certain it was that Will would blackmail the "man in high position"! "Doubtless" he did: we find Bacon arrested for debt, more than once, while Will buys New Place, in Stratford, with the money extorted from the concealed poet of high position. Bacon did associate with that serpent Phillips, a reptile of Walsingham, who forged a postscript to Mary Stuart's letter to Babington. But now, if not Bacon, then some other concealed poet of high position, with a mysterious passion for

rewriting and transforming plays by sad, needy authors, is in close contact with Will Shakspere, the Warwickshire poacher and ignorant butcher's boy, country schoolmaster, draper's apprentice, *enfin*, *tout le tremblement*.

"How strange, how more than strange!"

The sum of the matter seems to me to be that from as early as March 3, 1591, we find Henslowe receiving small sums of money for the performances of many plays. He was paid as owner or lessee of the House used by this or that company. On March 3, 1591, the play acted by "Lord Strange's (Derby's) men" was *Henry VI*. Several other plays with names familiar in Shakespeare's Works, such as *Titus Andronicus*, all the three parts of *Henry VI*, *King Leare* (April 6, 1593), *Henry V* (May 14, 1592), *The Taming of a Shrew* (June 11, 1594), and *Hamlet*, paid toll to Henslowe. He "received" so much, on each occasion, when they were acted in a theatre of his. But he never records his purchase of these plays; and it is not generally believed that Shakespeare was the author of all these plays, in the form which they bore in 1591–4: though there is much difference of opinion.

There is one rather interesting case. On August 25, 1594, Henslowe enters "*ne*" (that is, "a new play") "Received at the Venesyon Comodey, eighteen pence." That was his share of the receipts. The Lord Chamberlain's Company, that of Shakespeare, was playing in Henslowe's theatre at Newington Butts. If the "Venesyon Comodey" (Venetian Comedy) were *The Merchant of Venice*, this is the first mention of it. But nobody knows what Henslowe meant by "the Venesyon Comodey." He does not mention the author's name, because, in this part of his accounts he never does mention the author or authors. He only names them when he buys from, or lends to, or has other money dealings with the authors. He had none with Shakespeare, hence the Silence of Philip Henslowe.

IX. THE LATER LIFE OF SHAKESPEARE — HIS MONUMENT AND PORTRAITS

In the chapter on the Preoccupations of Bacon the reader may find help in making up his mind as to whether Bacon, with his many and onerous duties and occupations, his scientific studies, and his absorbing scientific preoccupation, is a probable author of the Shakespearean plays. Mr. Greenwood finds the young Shakspere impossible — because of his ignorance — which made him such a really good pseudo-author, and such a successful mask for Bacon, or Bacon's unknown equivalent. The Shakspere of later life, the well-to-do Shakspere, the purchaser of the right to bear arms; so bad at paying one debt at least; so eager a creditor; a would-be encloser of a common; a man totally bookless, is, to Mr. Greenwood's mind, an impossible author of the later plays.

Here, first, are moral objections on the ground of character as revealed in some legal documents concerning business. Now, I am very ready to confess that William's dealings with his debtors, and with one creditor, are wholly unlike what I should expect from the author of the plays. Moreover, the conduct of Shelley in regard to his wife was, in my opinion, very mean and cruel, and the last thing that we could have expected from one who, in verse, was such a tender philanthropist, and in life was — women apart — the best-hearted of men. The conduct of Robert Burns, alas, too often disappoints the lover of his *Cottar's Saturday Night* and other moral pieces. He was an inconsistent walker.

I sincerely wish that Shakespeare had been less hard in money matters, just as I wish that in financial matters Scott had been more like himself, that he had not done the last things that we should have expected him to do. As a member of the Scottish Bar it was inconsistent with his honour to be the secret proprietor of a publishing and a printing business. This is the unexplained moral paradox in the career of a man of chivalrous honour and strict probity: but the fault did not prevent Scott from writing his novels and poems. Why, then, should the few

bare records of Shakspere's monetary transactions make *his* authorship impossible? The objection seems weakly sentimental.

Macaulay scolds Scott as fiercely as Mr. Greenwood scolds Shakspere, — for the more part, ignorantly and unjustly. Still, there is matter to cause surprise and regret. Both Scott and Shakspere are accused of writing for gain, and of spending money on lands and houses with the desire to found families. But in the mysterious mixture of each human personality, any sober soul who reflects on his own sins and failings will not think other men's failings incompatible with intellectual excellence. Bacon's own conduct in money matters was that of a man equally grasping and extravagant. Ben Jonson thus describes Shakespeare as a social character: "He was indeed honest, and of an open and free nature . . . I loved the man and do honour his memory on this side idolatry as much as any." Perhaps Ben never owed money to Shakspere and refused to pay!

We must not judge a man's whole intellectual character, and declare him to be incapable of poetry, on the score of a few legal papers about matters of business. Apparently Shakspere helped that Elizabethan Mr. Micawber, his father, out of a pecuniary slough of despond, in which the ex-High Bailiff of the town was floundering, — pursued by the distraint of one of the friendly family of Quiney — Adrian Quiney. They were neighbours and made a common dunghill in Henley Street. I do not, like Mr. Greenwood, see anything "at all out of the way" in the circumstance "that a man should be writing *Hamlet*, and at the same time bringing actions for petty sums lent on loan at some unspecified interest." Nor do I see anything at all out of the way in Bacon's prosecution of his friend and benefactor, Essex (1601), while Bacon was writing *Hamlet*. Indeed, Shakspere's case is the less "out of the way" of the two. He wanted his loan to be repaid, and told his lawyer to bring an action. Bacon wanted to keep his head (of inestimable value) on his shoulders; or to keep his body out of the Tower; or he merely, as he declares, wanted to do his duty as a lawyer of the Crown. In any case, Bacon was in a tragic position almost unexampled; and was at once overwhelmed by work, and, one must suppose, by acute distress of mind, in the case of Essex. He must have felt this the more keenly, if, as some

Baconians vow, *he wrote the Sonnets to Essex*. Whether he were writing his *Hamlet* when engaged in Essex's case (1601), or any other of his dramatic masterpieces, even this astonishing man must have been sorely bestead to combine so many branches of business.

Thus I would reply to Mr. Greenwood's amazement that Shakspere, a hard creditor, and so forth, should none the less have been able to write his plays. But if it is meant that a few business transactions must have absorbed the whole consciousness of Shakespeare, and left him neither time nor inclination for poetry, consider the scientific preoccupation of Bacon, his parliamentary duties, his ceaseless activity as "one of the legal body-guard of the Queen" at a time when he had often to be examining persons accused of conspiracy, — and do not forget his long and poignant anxiety about Essex, his constant efforts to reconcile him with Elizabeth, and to advocate his cause without losing her favour; and, finally, the anguish of prosecuting his friend, and of knowing how hardly the world judged his own conduct. Follow him into his relations with James I; his eager pursuit of favour, the multiplicity of his affairs, his pecuniary distresses, and the profound study and severe labour entailed by the preparation for and the composition of *The Advancement of Learning* (1603–5). He must be a stout-hearted Baconian who can believe that, between 1599 and 1605, Bacon was writing *Hamlet*, and other masterpieces of tragedy or comedy. But all is possible to genius. What Mr. Greenwood's Great Unknown was doing at this period, "neither does he know, nor do I know, but he only." He, no doubt, had abundance of leisure.

At last Shakspere died (1616), and had not the mead of one melodious tear, as far as we know, from the London wits, in the shape of obituary verses. This fills Mr. Greenwood with amazement. "Was it because 'the friends of the Muses' were for the most part aware that Shakespeare had not died with Shakspere?" Did Jonson perchance think that his idea might be realised when he wrote,

"What a sight it were,
To see thee in our waters yet appear"?

and so on. Did Jonson expect and hope to see the genuine "Shakespeare" return to the stage, seven years after the death of Shakspere the actor, the Swan of Avon? As Jonson was fairly sane, we can no more suspect him of having hoped for this miracle than believe that most of the poets knew the actor not to be the author. Moreover Jonson, while desiring that Shakespeare might "shine forth" again and cheer the drooping stage, added,

"Which since thy flight from hence hath mourned like Night,
And despairs day, but for thy volume's light,"

that is — the Folio of 1623. Ben did not weave the amazing tissue of involved and contradictory falsities attributed to him by Baconians. Beaumont died in the same year as Shakspere, who died in the depths of the country, weary of London. Has Mr. Greenwood found obituary poems dropped on the grave of the famous Beaumont? Did Fletcher, did Jonson, produce one melodious tear for the loss of their friend; in Fletcher's case his constant partner? No? Were the poets, then, aware that Beaumont was a humbug, whose poems and plays were written by Bacon?

I am not to discuss Shakespeare's Will, the "second-best bed," and so forth. But as Shakespeare's Will says not a word about his books, it is decided by Mr. Greenwood that he had no books. Mr. Greenwood is a lawyer; so was my late friend Mr. Charles Elton, Q.C., of White Staunton, who remarks that Shakespeare bequeathed "all the rest of my goods, chattels, leases, &c., to my son-in-law, John Hall, gent." (He really *was* a "gent." with authentic coat-armour.)

It is with Mr. Elton's opinion, not with my ignorance, that Mr. Greenwood must argue in proof of the view that "goods" are necessarily exclusive of books, for Mr. Elton takes it as a quite natural fact that Shakespeare's books passed, with his other goods, to Mr. Hall, and thence to a Mr. Nash, to whom Mr. Hall left "my study of books" (library). I only give this as a lawyer's opinion.

There is in the Bodleian an Aldine Ovid, "with Shakespeare's" signature (merely Wm. She.), and a note, "This little volume of Ovid was given to me by

W. Hall, who sayd it was once Will Shakespeare's." I do not know that the signature (like that on Florio's *Montaigne*, in the British Museum) has been detected as a forgery; nor do I know that Shakespeare's not specially mentioning his books proves that he had none. Lawyers appear to differ as to this inference: both Mr. Elton and Mr. Greenwood seem equally confident. But if it were perfectly natural that the actor, Shakspere, should have no books, then he certainly made no effort, by the local colour of owning a few volumes, to persuade mankind that he *was* the author. Yet they believed that he was — really there is no wriggling out of it. As regards any of his own MSS. which Shakespeare may have had (one would expect them to be at his theatre), and their monetary value, if they were not, as usual, the property of his company, and of him as a member thereof, we can discuss that question in the section headed "The First Folio."

It appears that Shakespeare's daughter, Judith, could write no more than her grandfather. Nor, I repeat, could the Lady Jane Gordon, daughter of the great Earl of Huntly, when she was married to the Earl of Bothwell in 1566. At all events, Lady Jane "made her mark." It may be feared that Judith, brought up in that very illiterate town of Stratford, under an illiterate mother, was neglected in her education. Sad, but very common in women of her rank, and scarcely a proof that her father did not write the plays.

As "nothing is known of the disposition and character" of Shakespeare's granddaughter, Lady Barnard, who died in 1670, it is not so paralysingly strange that nothing is known of any relics or anecdotes of Shakespeare which she may have possessed. Mr. Greenwood "would have supposed that she would have had much to say about the great poet," exhibited his books (if any), and so forth. Perhaps she did, — but how, if we "know nothing about her disposition and character," can we tell? No interviewers rushed to her house (Abington Hall, Northampton-shire) with pencils and notebooks to record her utterances; no reporter interviewed her for the press. It is surprising, is it not?

The inference might be drawn, in the Baconian manner, that, during the Commonwealth and Restoration, "the friends of the Muses" knew that the actor

was *not* the author, and therefore did not interview his granddaughter in the country.

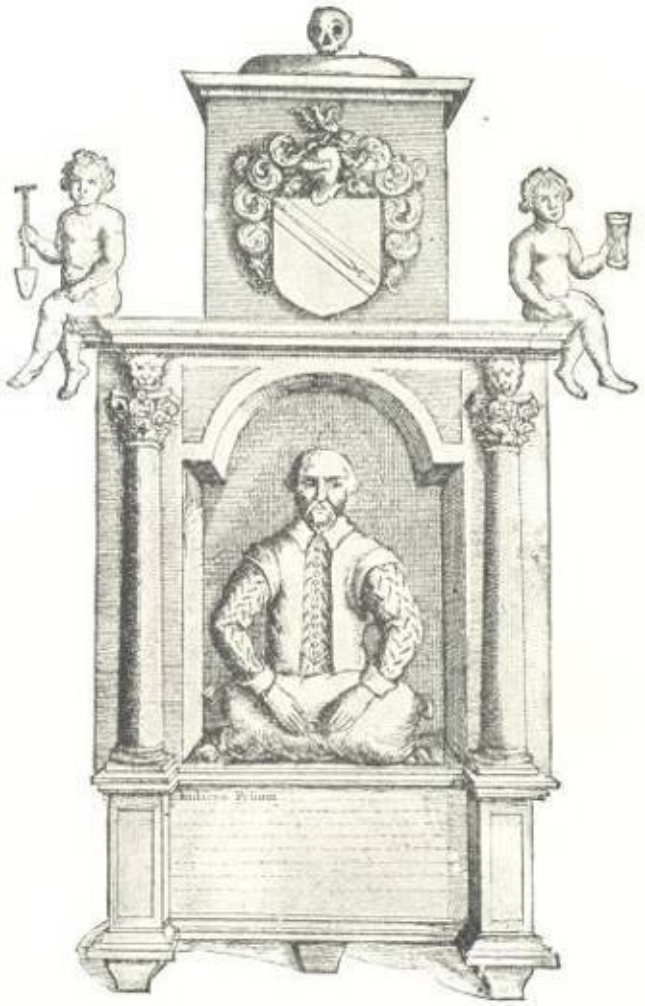
"But, at any rate, we have the Stratford monument," says Mr. Greenwood, and delves into this problem. Even the Stratford monument of Shakespeare in the parish church is haunted by Baconian mysteries. If the gentle reader will throw his eye over the photograph of the monument as it now exists, he may not be able to say to the face of the poet —

"Thou wast that all to me, Will,
For which my soul did pine."

But if he has any knowledge of Jacobean busts on monuments, he will probably agree with me in saying, "This effigy, though executed by somebody who was not a Pheidias, and who perhaps worked merely from descriptions, is, at all events, Jacobean." The same may assuredly be said of the monument; it is in good Jacobean style: the pillars with their capitals are graceful: all the rest is in keeping; and the two inscriptions are in the square capital letters of inscriptions of the period; not in italic characters. Distrusting my own *expertise*, I have consulted Sir Sidney Colvin, and Mr. Holmes of the National Portrait Gallery. They, with Mr. Spielmann, think the work to be of the early seventeenth century.

Next, glance at the figure opposite. This is a reproduction of "the earliest representation of the Bust" (and monument) in Dugdale's *Antiquities of Warwickshire* (1656). Compare the two objects, point by point, from the potato on top with holes in it, of Dugdale, which is meant for a skull, through all the details, — bust and all. Does Dugdale's print, whether engraved by Hollar or not, represent a Jacobean work? Look at the two ludicrous children, their legs dangling in air; at the lions' heads above the capitals of the pillars; at the lettering of the two visible words of the inscription, and at the gloomy hypochondriac or lunatic, clasping a cushion to his abdomen. That hideous design was not executed by an artist who "had his eye on the object," if the

object were a Jacobean monument: while the actual monument was fashioned in no period of art but the Jacobean. From Digges' rhymes in the Folio of 1623, we know that Shakespeare already had his "Stratford monument." *The existing object is what he had*; the monument in Dugdale is what, I hope, no architect of 1616–23 could have imagined or designed.



Dugdale's engraving is not a correct copy of any genuine Jacobean work of art. Is Dugdale accurate in his reproductions of other monuments in Stratford Church? To satisfy himself on this point, Sir George Trevelyan, as he wrote to me (June 13, 1912), "made a sketch of the Carew Renaissance monument in Stratford Church, and found that the discrepancies between the original tomb and the representation in Dugdale's *Warwickshire* are far and away greater than in the monument to William Shakespeare."

Mr. Greenwood, while justly observing that "the little sitting figures . . . are placed as no monumental sculptor would place them," "on the whole sees no reason at all why we should doubt the substantial accuracy of Dugdale's figure . . . It is impossible to suppose that Hollar would have drawn and that Dugdale would have published a mere travesty of the Stratford Monument."

I do not know who drew the design, but a travesty of Jacobean work it is in every detail of the monument. A travesty is what Dugdale gives as a representation of the Carew monument. Mr. Greenwood, elsewhere, repeating his criticism of the impossible figures of children, says: "This is certainly mere matter of detail, and, in the absence of other evidence, would give us no warrant for doubting the substantial accuracy of Dugdale's presentment of the 'Shakespeare' bust."

Why are we to believe that Dugdale's artist was merely fantastic in his design of the children (and also remote from Jacobean taste in every detail), and yet to credit him with "substantial accuracy" in his half-length of a gloomy creature clutching a cushion to his stomach? With his inaccuracies as to the Carew monument, why are we to accept him as accurate in his representation of the bust? Moreover, other evidence is not wanting. It is positively certain that the monument existing in 1748, was then known as "the original monument," and that no other monument was put in its place, at that date or later.

Now Mrs. Stopes argues that in 1748 the monument was "entirely reconstructed," and so must have become no longer what Dugdale's man drew, but what we see to-day. It is positively certain that her opinion is erroneous.

If ever what we see to-day was substituted for anything like what Dugdale's man drew, the date of the substitution is unknown.

Mrs. Stopes herself discovered the documents which disprove her theory. They were known to Halliwell-Phillipps, who quotes an unnamed "contemporary account." This account Mrs. Stopes, with her tireless industry, found in the Wheler manuscripts, among papers of the Rev. Joseph Greene, in 1746 Head Master of the Grammar School. In one paper of September 1740 "the original monument" is said to be "much impaired and decayed." There was a scheme for making "a new monument" in Westminster Abbey. *That*, I venture

to think, would have been in Hanoverian, not in Jacobean taste and style. But there was no money for a new monument. Mrs. Stopes also found a paper of November 20, 1748, showing that in September 1746, Mr. Ward (grandfather of Mrs. Siddons) was at Stratford with "a cry of players." He devoted the proceeds of a performance of *Othello* to the reparation of the then existing monument. The amount was twelve pounds ten shillings. The affair dragged on, one of the Churchwardens, a blacksmith, held the £12, 10*s.*, and was troublesome. The document of November 20, 1748, was drawn up to be signed, but was not signed, by the persons who appear to be chiefly concerned in the matter. It directed that Mr. Hall, a local limner or painter, is to "take care, according to his ability, that the monument shall become as like as possible to what it was when first erected." This appears to have been the idea of Mr. Greene. Another form of words was later adopted, directing Mr. Hall, the painter, "to repair and beautify, or to have the direction of repairing and beautifying, *the original monument* of Shakespeare the poet." Mrs. Stopes infers, justly in my opinion, that Hall "would fill up the gaps, restore what was amissing as he thought it ought to be, and finally repaint it according to the original colours, traces of which he might still be able to see." In his *History and Antiquities of Stratford-on-Avon*, Mr. Wheler tells us that this was what Hall did. "In the year 1748 the monument was carefully repaired, and the original colours of the bust, &c., as much as possible preserved by Mr. John Hall, limner, of Stratford."

It follows that we see the original monument and bust, but the painting is of 1861, for the bust, says Wheler, was in 1793 "painted in white," to please Malone. It was repainted in 1861.

Mrs. Stopes, unluckily, is not content with what Hall was told to do, and what, according to Wheler, he did. She writes: "It would only be giving good value for his money" (£12, 10*s.*) "to his churchwardens if Hall added (*sic*) a cloak, a pen, and manuscript." He "could not help changing" the face, and so on.

Now it was physically impossible to *add* a cloak, a pen, and manuscript to such a stone bust as Dugdale's man shows; to take away the cushion pressed to

the stomach, and to alter the head. Mr. Hall, if he was to give us the present bust, had to make an entirely new bust, and, to give us the present monument in place of that shown in Dugdale's print, had to construct an entirely new monument. Now Hall was a painter, not (like Giulio Romano) also an architect and sculptor. *Pour tout potage* he had but £12, 10*s.* He could not do, and he did not do these things! he did not destroy "the original monument" and make a new monument in Jacobean style. He was straitly ordered to "repair and beautify the original monument"; he did repair it, and repainted the colours. That is all. I do not quote what Halliwell-Phillipps tells us about the repairing of the forefinger and thumb of the right hand, and the pen; work which, he says, had to be renewed by William Roberts of Oxford in 1790. He gives no authority, and Baconians may say that he was hoaxed, or "lied with circumstance."

Mr. Greenwood quotes Halliwell-Phillipps's *Works of Shakespeare* (1853), in which he says that the design in Dugdale's book "is evidently too inaccurate to be of any authority; the probability being that it was not taken from the monument itself." Indeed the designer is so inaccurate that he gives the first word of the Latin inscription as "Judicyo," just as Oudry blunders in the Latin inscription of a portrait of Mary Stuart which he copied badly. Mr. Greenwood proceeds: "In his *Outlines* Halliwell simply ignores Dugdale. His engraving was doubtless too inconvenient to be brought to public notice!" Here Halliwell is accused of suppressing the truth; if he invented his minute details about the repeated reparation of the writing hand, — not represented in Dugdale's design, — he also lied with circumstance. But he certainly quoted a genuine "contemporary account" of the orders for repairing and beautifying the original monument in 1748, and I presume that he also had records for what he says about reparations of the hand and pen. He speaks, too, of substitutions for decayed alabaster parts of the monument, though not in his *Outlines*; and I observe that, in Mrs. Stopes's papers, there is record of a meeting on December 20, 1748, at which mention was made of "the materials" which Hall was to use for repairs.

To me the evidence of the style as to the date of both monument and bust speaks so loudly for their accepted date (1616–23) and against the Georgian date of 1748, that I need no other evidence; nor do I suppose that any one familiar with the monumental style of 1590–1620 can be of a different opinion. In the same way I do not expect any artist or engraver to take the engraving of the monument in Rowe's *Shakespeare* (1709), and that by Grignion so late as 1786, for anything but copies of the design in Dugdale, with modifications made *à plaisir*. In Pope's edition (1725) Vertue gives the monument with some approach to accuracy, but for the bald plump face of the bust presents a top-heavy and sculpturally impossible face borrowed from "the Chandos portrait," which, in my opinion, is of no more authority than any other portrait of Shakespeare. None of them, I conceive, was painted from the life.

The Baconians show a wistful longing to suppose the original bust, copied in Dugdale, to have been meant for Bacon; but we need not waste words over this speculation. Mr. Greenwood writes that "if I should be told that Dugdale's effigy represented an elderly farmer deploring an exceptionally bad harvest, 'I should not feel it to be strange!' Neither should I feel it at all strange if I were told that it was the presentment of a philosopher and Lord Chancellor, who had fallen from high estate and recognised that all things are but vanity."

"*I* should not feel it to be strange" if a Baconian told me that the effigy of a living ex-Chancellor were placed in the monument of the dead Will Shakspere, and if, on asking why the alteration was made, I were asked in reply, in Mr. Greenwood's words, "Was Dugdale's bust thought to bear too much resemblance to one who was not Shakspere of Stratford? Or was it thought that the presence of a woolsack" (the cushion) "might be taken as indicating that Shakspere of Stratford was indebted for support to a certain Lord Chancellor?" Such, indeed, are the things that Baconians might readily say: do say, I believe.

Dugdale's engraving reproduces the first words of a Latin inscription, still on the monument:

Judicio Pylium, *genio Socratem*, *arte Maronem*
Terra tegit, *populus mæret*, *Olympus habet*:

"Earth covers, Olympus" (heaven? or the Muses' Hill?) "holds him who was a Nestor in counsel; in poetic art, a Virgil; a Socrates for his Dæmon" ("Genius"). As for the "Genius," or dæmon of Socrates, and the permitted false quantity in making the first syllable of Socrates short; and the use of *Olympus* for heaven in epitaphs, it is sufficient to consult the learning of Mr. Elton. The poet who made such notable false quantities in his plays had no cause to object to another on his monument. We do not know who erected the monument, and paid for it, or who wrote or adapted the epitaph; but it was somebody who thought Shakespeare (or Bacon?) "a clayver man." The monument (if a trembling conjecture may be humbly put forth) was conceivably erected by the piety of Shakespeare's daughter and son-in-law, Mr. and Mrs. Hall. They exhibit a taste for the mortuary memorial and the queer Latin inscription. Mrs. Hall gratified the Manes of her poor mother, Mrs. Shakespeare, with one of the oddest of Latin epitaphs. It opens like an epigram in the Greek Anthology, and ends in an unusual strain of Christian mysticism. Mr. Hall possesses, perhaps arranged for himself, a few Latin elegiacs as an epitaph.

The famous "Good friend for Jesus' sake forbear," and so on, on the stone in the chancel, beneath which the sacred dust of Shakespeare lies, or lay, is the first of "the last lines written, we are told," "by the author of *Hamlet*." Who tells us that Shakespeare wrote the four lines of doggerel? Is it conceivable that the authority for Shakespeare's authorship of the doggerel is a tradition gleaned by Mr. Dowdall of Queen's in 1693, from a parish clerk, aged over eighty, he says, — criticism makes the clerk twenty years younger. For Baconians the lines are bad enough to be the work of William Shakspere of Stratford.

Meanwhile, in 1649, when Will's daughter, Mrs. Hall, died, her epitaph spoke quite respectfully of her father's intelligence.

"Witty above her sex, but that's not all,
Wise to salvation was good Mistris Hall,
Something of Shakespeare was in *that*, but *this*
Wholly of Him with whom she's now in bliss."

Thirty-three years after Shakespeare's death he was still thought "witty" in Stratford. But what could Stratford know? Milton and Charles I were of the same opinion; so was Suckling, and the rest of the generation after Shakespeare. But they did not know, how should they, that Bacon (or his equivalent) was the genuine author of the plays and poems. The secret, perhaps, so widely spread among "the friends of the Muses" in 1616, was singularly well kept by a set of men rather given to blab as a general rule.

I confess to be passing weary of the Baconian hatred of Will, which pursues him beyond his death with sneers and fantastic suspicions about his monument and his grave, and asks if he "died with a curse upon his lips, an imprecation against any man who might *move his bones*? A mean and vulgar curse indeed!" And the authority for the circumstance that he died with a mean and vulgar curse upon his lips?

About 1694, a year after Mr. Dowdall in 1693, and eighty years almost after Shakespeare's death, W. Hall, a Queen's man, Oxford (the W. Hall, perhaps, who gave the Bodleian Aldine Ovid, with Shakespeare's signature, true or forged, to its unknown owner), went to Stratford, and wrote about his pilgrimage to his friend Mr. Thwaites, a Fellow of Queen's. Mr. Hall heard the story that Shakespeare was the author of the mean and vulgar curse. He adds that there was a great ossuary or bone-house in the church, where all the bones dug up were piled, "they would load a great number of waggons." Not desiring this promiscuity, Shakespeare wrote the Curse in a style intelligible to clerks and sextons, "for the most part a very ignorant sort of people."

If Shakespeare *did*, that accommodation of himself to his audience was the last stroke of his wisdom, or his wit. Of course there is no evidence that he wrote the mean and vulgar curse: that he did is only the pious hope of the Baconians and Anti-Willians.

Into the question of the alleged portraits of Shakespeare I cannot enter. Ben spoke well of the engraving prefixed to the First Folio, but Ben, as Mr. Greenwood says, was anxious to give the Folio "a good send-off." The engraving is choicely bad; we do not know from what actual portrait, if from

any, it was executed. Richard Burbage is known to have amused himself with the art of design; possibly he tried his hand on a likeness of his old friend and fellow-actor. If so, he may have succeeded no better than Mary Stuart's embroiderer, Oudry, in his copy of the portrait of her Majesty.

That Ben Jonson was painted by Honthorst and others, while Shakespeare, as far as we know, was not, has nothing to do with the authorship of the plays. Ben was a scholar, the darling of both Universities; constantly employed about the Court in arranging Masques; his learning and his Scottish blood may have led James I to notice him. Ben, in his later years, was much in society; fashionable and literary. He was the father of the literary "tribe of Ben." Thus he naturally sat for his portrait. In the same way George Buchanan has, and had, nothing like the fame of Knox. But as a scholar he was of European reputation; haunted the Court as tutor of his King, and was the "good pen" of the anti-Marian nobles, Murray, Morton, and the rest. Therefore Buchanan's portrait was painted, while of Knox we have only a woodcut, done, apparently, after his death, from descriptions, for Beza's *Icones*. The Folio engraving may have no better source. Without much minute research it is hard to find authentic portraits of Mary Stuart, and, just as in Shakespeare's case, the market, in her own day and in the eighteenth century, was flooded with "mock-originals," not even derived (in any case known to me) from genuine and authentic contemporary works.

One thing is certain about the Stratford bust. Baconians will believe that Dugdale's man correctly represented the bust as it was in his time; and that the actual bust is of 1748, in spite of proofs of Dugdale's man's fantastic inaccuracy; in spite of the evidence of style; and in spite of documentary evidence that "the original monument" was not to be destroyed and replaced by the actual monument, but was merely "repaired and beautified" (painted afresh) by a local painter.

X. “THE TRADITIONAL SHAKSPERE”

In perusing the copious arguments of the Anti-Shakesperean but Non-Baconian Mr. Greenwood, I am often tempted, in Socratic phrase, to address him thus: Best of men, let me implore you, first, to keep in memory these statements on which you have most eloquently and abundantly insisted, namely, that society in Stratford was not only not literary, but was illiterate. Next pardon me for asking you to remember that the late sixteenth and the early seventeenth century did not resemble our fortunate age. Some people read Shakespeare’s, Beaumont’s, and Fletcher’s plays. This exercise is now very rarely practised. But nobody cared to chronicle literary gossip about the private lives and personal traits of these and several other Elizabethan and Jacobean playwrights, in the modern manner. Of Shakespeare (pardon, I mean Shakspere), the actor, there is one contemporary anecdote, in my poor opinion a baseless waggery. Of Beaumont there is none. Of a hand-maid of Fletcher, who drank sack in a tumbler, one anecdote appears at the end of the seventeenth century, — nothing better. Meanwhile of Shakspere the “traditions” must be sought either at Stratford or in connection with the London Stage; and in both cases the traditions began to be in demand very late.

As Stratford was not literary, indeed was terribly illiterate, any traditions that survived cannot conceivably have been literary. That is absolutely certain. Natives at Stratford had, by your own hypothesis, scant interest in literary anecdote. Fifty years after Shakespeare’s death, no native was likely to cherish tales of any sprouts of wit (though it was remembered in 1649, that he was “witty”), or any “wood-notes wild,” which he may have displayed or chirped at an early age.

Such things were of no interest to Stratford. If he made a speech when he killed a calf, or poached, or ran away to town, the circumstance might descend from one gaffer to another; he might even be remembered as “the best of his

family," — the least inefficient. Given your non-literary and illiterate Stratford, and you can expect nothing more, and nothing better, than we receive.

Let me illustrate by a modern example. In 1866 I was an undergraduate of a year's standing at Balliol College, Oxford, certainly not an unlettered academy. In that year, the early and the best poems of a considerable Balliol poet were published: he had "gone down" some eight years before. Being young and green I eagerly sought for traditions about Mr. Swinburne. One of his contemporaries, who took a First in the final Classical Schools, told me that "he was a smug." Another, that, as Mr. Swinburne and his friend (later a Scotch professor) were not cricketers, they proposed that they should combine to pay but a single subscription to the Cricket Club. A third, a tutor of the highest reputation as a moralist and metaphysician, merely smiled at my early enthusiasm, — and told me nothing. A white-haired College servant said that "Mr. Swinburne was a very quiet gentleman."

Then you take us to dirty illiterate Stratford, from fifty to eighty years after Shakspere's death, — a Civil War and the Reign of the Saints, a Restoration and a Revolution having intervened, — and ask us to be surprised that no anecdotes of Shakspere's early brilliance, a century before, survived at Stratford.

A very humble parallel may follow. Some foolish person went seeking early anecdotes of myself at my native town, Selkirk on the Ettrick. From an intelligent townsman he gathered much that was true and interesting about my younger brothers, who delighted in horses and dogs, hunted, shot, and fished, and played cricket; one of them bowled for Gloucestershire and Oxford. But about me the inquiring literary snipe only heard that "Andra was aye the stupid ane o' the fam'ly." Yet, I, too, had bowled for the local club, *non sine gloria*! Even *that* was forgotten.

Try to remember, best of men, that literary anecdotes of a fellow townsman's youth do not dwell in the memories of his neighbours from sixty to a hundred years after date. It is not in human nature that what was incomprehensible to the grandsire should be remembered by the grandson. Go to "Thrums" and ask for literary memories of the youth of Mr. Barrie.

Yet the learned Malone seems to have been sorry that little of Shakespeare but the calf-killing and the poaching, and the dying of a fever after drink taken (*where*, I ask you?), with Ben and Drayton, was remembered, so long after date, at Stratford, of all dirty ignorant places. Bah! how could these people have heard of Drayton and Ben? Remember that we are dealing with human nature, in a peculiarly malodorous and densely ignorant *bourgade*, where, however, the "wit" of Shakespeare was not forgotten (in the family) in 1649. See the epithet on the tomb of his daughter, Mrs. Hall.

You give us the Rev. John Ward, vicar of Stratford (1661–3), who has heard that the actor was "a natural wit," and contracted and died of a fever, after a bout with Drayton and Ben. I can scarcely believe that *these* were local traditions. How could these *rustauds* have an opinion about "natural wit," how could they have known the names of Ben and Drayton?

When you come to Aubrey, publishing in 1680, sixty years after Shakespeare's death, you neglect to trace the steps in the descent of his tradition. As has been stated, Beeston, "the chronicle of the Stage" (died 1682), gave him the story of the school-mastering; Beeston being the son of a servitor of Phillips, an actor and friend of Shakespeare, who died eleven years before that player. The story of the school-mastering and of Shakespeare "knowing Latin pretty well," is of no value to me. I think that he had some knowledge of Latin, as he must have had, if he were what I fancy him to have been, and if (which is mere hypothesis) he went for four years to a Latin School. But the story does not suit you, and you call it "a mere myth," which, "of course, will be believed by those who wish to believe it." But, most excellent of mortals, will it not, by parity of reasoning, "of course be disbelieved by those who do *not* wish to believe it"?

And do you want to believe it?

To several stage anecdotes of the actor as an excellent instructor of younger players, you refer slightingly. They do not weigh with me: still, the Stage would remember Shakspere (or Shakespeare) best in stage affairs. In reference to a very elliptic statement that, "in *Hamlet* Betterton benefited by Shakespeare's

coaching," you write, "This is astonishing, seeing that Shakspere had been in his grave nearly twenty years when Betterton was born. The explanation is that Taylor, of the Black Fryars Company, was, according to Sir William Davenant, instructed by Shakspere, and Davenant, who had seen Taylor act, according to Downes, instructed Betterton. There is a similar story about Betterton playing King Henry VIII. Betterton was said to have been instructed by Sir William, who was instructed by Lowen, who was instructed by Shakspere!"

Why a note of exclamation? Who was Downes, and what were his opportunities of acquiring information? He "was for many years book-keeper in the Duke's Company, first under Davenant in the old house . . . " Davenant was notoriously the main link between "the first and second Temple," the theatre of Shakespeare whom, as a boy, he knew, and the Restoration theatre. Devoted to the traditions of the stage, he collected Shakespearean and other anecdotes; he revived the theatre, cautiously, during the last years of Puritan rule, and told his stories to the players of the early Restoration. As his Book-keeper with the Duke of York's Company, Downes heard what Davenant had to tell; he also, for his *Roscius Anglicanus*, had notes from Charles Booth, prompter at Drury Lane. On May 28, 1663, Davenant reproduced *Hamlet*, with young Betterton as the Prince of Denmark. Davenant, says Charles Booth, "had seen the part taken by Taylor, of the Black Fryars Company, and Taylor had been instructed by the author," (not Bacon but) "Mr. William Shakespeare," and Davenant "taught Mr. Betterton in every particle of it." Mr. Elton adds, "We cannot be sure that Taylor was taught by Shakespeare himself. He is believed to have been a member of the King's Company before 1613, and to have left it for a time before Shakespeare's death." His name is in the list in the Folio of "the principall Actors in all these plays," but I cannot pretend to be certain that he played in them in Will's time.

It is Mr. Pepys (December 30, 1668) who chronicles Davenant's splendid revival of *Henry VIII*, in which Betterton, as the King, was instructed by Sir William Davenant, who had it from old Mr. Lowen, that had his instruction "from Mr. Shakespear himself." Lowin, or Lowen, joined Shakespeare's

Company in 1604, being then a man of twenty-eight. Burbage was the natural man for Hamlet and Henry VIII; but it is not unusual for actors to have "understudies."

The stage is notoriously tenacious of such traditions.

When we come with you to Mr. W. Fulman, about 1688, and the additions to his notes made about 1690–1708, we are concerned with evidence much too remote, and, in your own classical style, "all this is just a little mixed." With what Mr. Dowdall heard in 1693, and Mr. William Hall (1694) heard from a clerk or sexton, or other illiterate dotard at Stratford, I have already dealt. I do not habitually believe in what I hear from "the oldest aunt telling the saddest tale," — no, not even if she tells a ghost story, or an anecdote about the presentation by Queen Mary of her portrait to the ancestor of the Laird, — the portrait being dated 1768, and representing her Majesty in the bloom of girlhood. Nor do I care for what Rowe said (on Betterton's information), in 1709, about Shakespeare's schooling; nor for what Dr. Furnivall said that Plume wrote; nor for what anybody said that Sir John Mennes (Menzies?) said. But I do care for what Ben Jonson and Shakespeare's fellow-actors said; and for what his literary contemporaries have left on record. But this evidence you explain away by ætiological guesses, absolutely modern, and, I conceive, to anyone familiar with historical inquiry, not more valuable as history than other explanatory myths.

What Will Shakspere had to his literary credit when he died, was men's impressions of the seeing of his acted plays; with their knowledge, if they had any, of fugitive, cheap, perishable, and often bad reprints, in quartos, of about half of the plays. Men also had *Venus and Adonis*, *Lucrece*, and the Sonnets, which sold very poorly, and I do not wonder at it. Of the genius of Shakespeare England could form no conception, till the publication of the Folio (1623), not in a large edition; it struggled into a Third Edition in 1664. The *engouement* about the poet, the search for personal details, did not manifest itself with any vigour till nearly thirty years after 1664 — and we are to wonder that the gleanings, at illiterate Stratford, and in Stage tradition, are so scanty and so valueless. What

could have been picked up, by 1680–90, about Bacon at Gorhambury, or in the Courts of Law, I wonder.

XI. THE FIRST FOLIO

"The First Folio" is the name commonly given to the first collected edition of Shakespeare's plays. The volume includes a Preface signed by two of the actors, Heminge and Condell, panegyrical verses by Ben Jonson and others, and a bad engraved portrait. The book has been microscopically examined by Baconians, hunting for cyphered messages from their idol in italics, capital letters, misprints, and everywhere. Their various discoveries do not win the assent of writers like the late Lord Penzance and Mr. Greenwood.

The mystery as to the sources, editing, and selection of plays in the Folio (1623) appears to be impenetrable. The title-page says that *all* the contents are published "according to the true original copies." If *only* MS. copies are meant, this is untrue; in some cases the best quartos were the chief source, supplemented by MSS. The Baconians, following Malone, think that Ben Jonson wrote the Preface (and certainly it looks like his work), speaking in the name of the two actors who sign it. They say that Shakespeare's friends "have collected and published" the plays, have so published them "that whereas you were abus'd with divers stolne and surreptitious copies, maimed and deformed by the frauds and stealthes of injurious impostors that exposed them: *even those*" (namely, the pieces previously ill-produced by pirates) "are now offered to your view cur'd, and perfect of their limbes; and *all the rest*" (that is, all the plays which had not been piratically debased), "absolute in their numbers, as he conceived them." So obscure is the Preface that not *all* previously published separate plays are explicitly said to be stolen and deformed, but "*divers* stolen copies" are denounced. Mr. Pollard makes the same point in *Shakespeare Folios and Quartos*, (1909).

Now, as a matter of fact, while some of the quarto editions of separate plays are very bad texts, others are so good that the Folio sometimes practically reprints them, with some tinkerings, from manuscripts. Some quartos, like that of *Hamlet* of 1604, are excellent, and how they came to be printed from good

texts, and whether or not the texts were given to the press by Shakespeare's Company, or were sold, or stolen, is the question. Mr. Pollard argues, on grounds almost certain, that "we have strong *prima facie* evidence that the sale to publishers of plays afterwards duly entered on the Stationers' Registers was regulated by their lawful owners."

The Preface does not explicitly deny that some of the separately printed texts were good, but says that "divers" of them were stolen and deformed. My view of the meaning of the Preface is not generally held. Dr. H. H. Furness, in his preface to *Much Ado about Nothing* (), says, "We all know that these two friends of Shakespeare assert in their Preface to the Folio that they had used the Author's manuscripts, and in the same breath denounce the Quartos as stolen and surreptitious." I cannot see, I repeat, that the Preface denounces *all* the Quartos. It could be truly said that *divers* stolen and maimed copies had been foisted on "abused" purchasers, and really no more *is* said. Dr. Furness writes, "When we now find them using as 'copy' one of these very Quartos" (*Much Ado about Nothing*, 1600), "we need not impute to them a wilful falsehood if we suppose that in using what they knew had been printed from the original text, howsoever obtained, they held it to be the same as the manuscript itself . . . " That *was* their meaning, I think, the Quarto of *Much Ado* had *not* been "maimed" and "deformed," as divers other quartos, stolen and surreptitious, had been.

Shakspere, unlike most of the other playwrights, was a member of his Company. I presume that his play was thus the common good of his Company and himself. If they sold a copy to the press, the price would go into their common stock; unless they, in good will, allowed the author to pocket the money.

It will be observed that I understand the words of the Preface otherwise than do the distinguished Editors of the Cambridge edition. They write, "The natural inference to be drawn from this statement" (in the Preface) "is that *all* the separate editions of Shakespeare's plays were 'stolen,' 'surreptitious' and imperfect, *and that all those published in the Folio were printed from the*

author's own manuscripts" (my italics). The Editors agree with Dr. Furness, not with Mr. Pollard, whose learned opinion coincides with my own.

Perhaps it should be said that I reached my own construction of the sense of this passage in the Preface by the light of nature, before Mr. Pollard's valuable book, based on the widest and most minute research, came into my hands. By the results of that research he backs his opinion (and mine), that some of the quartos are surreptitious and bad, while others are good "and were honestly obtained." The Preface never denies this; never says that all the quartos contain maimed and disfigured texts. The Preface draws a distinction to this effect, "even those" (even the stolen and deformed copies) "are now cured and perfect in their limbs," — that is, have been carefully edited, while "*all the rest*" are "absolute in their numbers as he conceived them." This does not allege that all the rest are printed from Shakespeare's own holograph copies.

Among the plays spoken of as "all the rest," namely, those not hitherto published and not deformed by the fraudulent, are, *Tempest*, *Two Gentlemen*, *Measure for Measure*, *Comedy of Errors*, *As You Like It*, *All's Well*, *Twelfth Night*, *Winter's Tale*, *Henry VI*, iii., *Henry VIII*, *Coriolanus*, *Timon*, *Julius Cæsar*, *Macbeth*, *Antony and Cleopatra*, and *Cymbeline*. Also *Henry VI*, i., ii., *King John*, and *Taming of the Shrew*, appeared now in other form than in the hitherto published Quartos bearing these or closely similar names. We have, moreover, no previous information as to *The Shrew*, *Timon*, *Julius Cæsar*, *All's Well*, and *Henry VIII*. The Preface adds the remarkable statement that, whatever Shakespeare thought, "he uttered with that easinesse, that wee have scarce received from him a blot in his papers."

It is plain that the many dramas previously unpublished could only be recovered from manuscripts of one sort or another, because they existed in no other form. The Preface takes it for granted that the selected manuscripts contain the plays "absolute in their numbers as he conceived them." But the Preface does not commit itself, I repeat, to the statement that all of these many plays are printed from Shakespeare's own handwriting. After "as he conceived them," it goes on, "Who, as he was a most happy imitator of nature, was a most

gentle expresser of it. His mind and hand went together: and what he thought he uttered with that easiness, that we have scarce received from him a blot in his papers."

This may be meant to *suggest*, but does not *affirm*, that the actors *have* "all the rest" of the plays in Shakespeare's own handwriting. They may have, or may have had, some of his manuscripts, and believed that other manuscripts accessible to them, and used by them, contain his very words. Whether from cunning or design, or from the Elizabethan inability to tell a plain tale plainly, the authors or author of the Preface have everywhere left themselves loopholes and ways of evasion and escape. It is not possible to pin them down to any plain statement of facts concerning the sources for the hitherto unpublished plays, "the rest" of the plays.

These, at least, were from manuscript sources which the actors thought accurate, and some may have been "fair copies" in Shakespeare's own hand. (Scott, as regards his novels, sent his *prima cura*, his first writing down, to the press, and his pages are nearly free from blot or erasion. In one case at least, Shelley's first draft of a poem is described as like a marsh of reeds in water, with wild ducks, but he made very elegant fair copies for the press.) Let it be supposed that Ben Jonson wrote all this Preface, in accordance with the wishes and instructions of the two actors who sign it. He took their word for the almost blotless MSS. which they received from Shakespeare. He remarks, in his posthumously published *Discoveries* (notes, memories, brief essays), "I remember the players have *often* mentioned it as an honour to Shakespeare, that in his writing (whatsoever he penned) he never blotted out a line." And Ben gives, we shall later see, his habitual reply to this habitual boast.

As to the sources of such plays as had been "maimed and deformed by injurious impostors," and are now "offered cur'd and perfect of their limbs," "it can be proved to demonstration," say the Cambridge Editors, "that several plays in the Folio were printed from earlier quarto editions" (but the players secured a retreat on this point), "and that in other cases the quarto is more correctly printed, or from a better manuscript than the Folio text, and therefore of higher

authority." *Hamlet*, in the Folio of 1623, when it differs from the quarto of 1604, "differs for the worse in forty-seven places, while it differs for the better in twenty places."

Can the wit of man suggest any other explanation than that the editing of the Folio was carelessly done; out of the best quartos and MSS. in the theatre for acting purposes, and, — if the players did not lie in what they "often said," and if they kept the originals, — out of some MSS. received from Shakspere? Whether the two players themselves threw into the press, after some hasty botchings, whatever materials they had, or whether they employed an Editor, a very wretched Editor, or Editors, or whether the great Author, Bacon, himself was his own Editor, the preparation of a text was infamously done. The two actors, probably, I think, never read through the proof-sheets, and took the word of the man whom they employed to edit their materials, for gospel. The editing of the Folio is so exquisitely careless that twelve printer's errors in a quarto of 1622, of *Richard III*, appear in the Folio of 1623. Again, the *Merry Wives* of the Folio, is nearly twice as long as the quarto of 1619, yet keeps old errors.

How can we explain the reckless retention of errors, and also the large additions and improvements? Did the true author (Bacon or Bungay) now edit his work, add much matter, and go wrong forty-seven times where the quarto was right, and go right twenty times when the quarto was wrong? Did he, for the Folio of 1623, nearly double *The Merry Wives* in extent, and also leave all the errors of the fourth quarto uncorrected?

In that case how negligent was Bacon of his immortal works! Now Bacon was a scholar, and this absurd conduct cannot be imputed, I hope, to him.

Mr. Pollard is much more lenient than his fellow-scholars towards the Editor or Editors of the Folio. He concludes that "manuscript copies of the plays were easily procurable." Sixteen out of the thirty-six plays existed in quartos. Eight of the sixteen were not used for the Folio; five were used, "with additions, corrections, or alterations" (which must have been made from manuscripts). Three quartos only were reprinted as they stood. The Editors greatly preferred to use manuscript copies; and showed this, Mr. Pollard thinks, by placing plays,

never before printed, in the most salient parts of the three sets of dramas in their book. They did make an attempt to divide their plays into Acts and Scenes, whereas the quartos, as a general rule, had been undivided. But the Editors, I must say, had not the energy to carry out their good intentions fully — or Bacon or Bungay, if the author, wearied in well-doing. The work is least ill done in the Comedies, and grows worse and worse as the Editor, or Bacon, or Bungay becomes intolerably slack.

A great living author, who had a decent regard for his own works, could never have made or passed this slovenly Folio. Yet Mr. Greenwood argues that probably Bungay was still alive and active, after Shakspere was dead and buried. (Mr. Greenwood, of course, does not speak of Bungay, which I use as short for his Great Unknown.) Thus, *Richard III* from 1597 to 1622 appeared in six quartos. It is immensely improved in the Folio, and so are several other plays. Who made the improvements, which the Editors could only obtain in manuscripts? If we say that Shakespeare made them in MS., Mr. Greenwood asks, "What had he to work upon, since, after selling his plays to his company, he did not preserve his manuscript?" Now I do not know that he did sell his plays to his company. We are sure that Will got money for them, but we do not know what arrangement he made with his company. He may have had an author's rights in addition to a sum down, as later was customary, and he had his regular share in the profits. Nor am I possessed of information that "he did not preserve his manuscript." How can we know that? He may have kept his first draft, he may have made a fair copy for himself, as well as for the players, or may have had one made. He may have worked on a copy possessed by the players; and the publisher of the quartos of 1605, 1612, 1622, may not have been allowed to use, or may not have asked for the latest manuscript revised copy. The *Richard III* of the Folio contains, with much new matter, the printer's errors of the quarto of 1622. I would account for this by supposing that the casual Editor had just sense enough to add the new parts in a revised manuscript to the quarto, and was far too lazy to correct the printer's errors in the quarto. But Mr. Greenwood asks whether "the natural conclusion is not that 'some person

unknown' took the Quarto of 1622, revised it, added the new passages, and thus put it into the form in which it appeared in 1623." This natural conclusion means that the author, Bungay, was alive in 1622, and put his additions and improvements of recent date into the quarto of 1622, but never took the trouble to correct the errors in the quarto. And so on in other plays similarly treated. "Is it not a more natural conclusion that 'Shakespeare'" (Bungay) "himself revised its publication, and that some part of this revision, at any rate, was done after 1616 and before 1623."

Mr. Greenwood, after criticising other systems, writes, "There is, of course, another hypothesis. It is that Shakespeare" (meaning the real author) "did not die in 1616," and here follows the usual notion that "Shakespeare" was the "*nom de plume*" of that transcendent genius, "moving in Court circles among the highest of his day (as assuredly Shakespeare must have moved) — who wished to conceal his identity."

I have not the shadow of assurance that the Author "moved in Court circles," though Will would see a good deal when he played at Court, and in the houses of nobles, before "Eliza and our James." I never moved in Court circles: Mr. Greenwood must know them better than I do, and I have explained (see *Love's Labour's Lost*, and *Shakespeare*, *Genius*, *and Society*) how Will picked up his notions of courtly ways.

"Another hypothesis," the Baconian hypothesis,— "*nom de plume*" and all, — Mr. Greenwood thinks "an extremely reasonable one": I cannot easily conceive of one more unreasonable.

"Supposing that there was such an author as I have suggested, he may well have conceived the idea of publishing a collected edition of the plays which had been written under the name of Shakespeare, and being himself busy with other matters, he may have entrusted the business to some 'literary man,' to some 'good pen,' who was at the time doing work for him; and why not to the man who wrote the commendatory verses, the 'Lines to the Reader'" (opposite to the engraving), "and, as seems certain, the Preface, 'to the great variety of Readers'?"

That man, that "good pen," was Ben Jonson. On the "supposing" of Mr. Greenwood, Ben is "doing work for" the Great Unknown at the time when "the business" following on the "idea of publishing a collected edition of the plays which had been written under the name of Shakespeare" occurred to the illustrious but unknown owner of that "*nom de plume*." In plain words of my own, — the Author may have entrusted "the business," and what was that business if not the editing of the Folio? — to Ben Jonson— "who was at the time doing work for him" — for the Author.

Here is a clue! We only need to know for what man of "transcendent genius, universal culture, world-wide philosophy . . . moving in Court circles," and so on, Ben "was working" about 1621–3, the Folio appearing in 1623.

The heart beats with anticipation of a discovery! "On January 22, 1621, Bacon celebrated his sixtieth birthday with great state at York House. Jonson was present," and wrote an ode, with something about the Genius of the House (*Lar* or Brownie), "Thou stand'st as if some mystery thou didst."

Mr. Greenwood does not know what this can mean; nor do I.

"Jonson, it appears" (on what authority?), "was Bacon's guest at Gorhambury, and was one of those good 'pens,'" of whom Bacon speaks as assisting him in the translation of some of his books into Latin.

Bacon, writing to Toby Mathew, June 26, 1623, mentions the help of "some good pens," Ben Jonson he does not mention. But Judge Webb does. "It is an undoubted fact," says Judge Webb, "that the Latin of the *De Augmentis*, which was published in 1623, was the work of Jonson." To whom Mr. Collins replies, "There is not a particle of evidence that Jonson gave to Bacon the smallest assistance in translating any of his works into Latin."

Très bien, on Judge Webb's assurance the person for whom Ben was working, in 1623, was Bacon. Meanwhile, Mr. Greenwood's "supposing" is "that there was such an author" (of transcendent genius, and so on), who "may have entrusted the editing of his collected plays" to some "good pen," who was at the time "doing work for him," and "why not to" — Ben Jonson. Now the

man for whom Ben, in 1623, was "doing work" — was Bacon, — so Judge Webb says.

Therefore, by this hypothesis of Mr. Greenwood, the Great Unknown was Bacon, — just the hypothesis of the common Baconian.

Is my reasoning erroneous? Is the "supposing" suggested by Mr. Greenwood any other than that of Miss Delia Bacon, and Judge Webb? True, Mr. Greenwood's Baconian "supposing" is only a working hypothesis: not a confirmed belief. But it is useful to his argument (see "Ben Jonson and Shakespeare") when he wants to explain away Ben's evidence, in his verses in the Folio, to the Stratford actor as the Author.

Mr. Greenwood writes, in the first page of his Preface: "It is no part of my plan or intention to defend that theory," "the Baconian theory." Apparently it pops out contrary to the intention of Mr. Greenwood. But pop out it does: at least I can find no flaw in the reasoning of my detection of Bacon: I see no way out of it except this: after recapitulating what is said about Ben as one of Bacon's "good pens" with other details, Mr. Greenwood says, "But no doubt that way madness lies!" Ah no! not madness, no, but Baconism "lies that way." However, "let it be granted" (as Euclid says in his sportsmanlike way) that Mr. Greenwood by no means thinks that his "concealed poet" is Bacon — only some one similar and similarly situated and still active in 1623, and occupied with other business than supervising a collected edition of plays written under his "*nom de plume*" of Shakespeare. Bacon, too, was busy, with supervising, or toiling at the Latin translation of his scientific works, and Ben (according to Judge Webb) was busy in turning the *Advancement of Learning* into Latin prose. Mr. Greenwood quotes, without reference, Archbishop Tenison as saying that Ben helped Bacon in doing his works into Latin. Tenison is a very late witness. The prophetic soul of Bacon did not quite trust English to last as long as Latin, or he thought Latin, the *lingua franca* of Europe in his day, more easily accessible to foreign students, as, of course, it was. Thus Bacon was very busy; so was Ben. The sad consequence of Ben's business, perhaps, is that the editing

of the Folio is notoriously bad; whether Ben were the Editor or not, it is infamously bad.

Conceivably Mr. Greenwood is of the same opinion. He says, "It stands admitted that a very large part of that volume" (the Folio) "consists of work that is not 'Shakespeare's' at all."

How strange, if Ben edited it for the Great Unknown — who knew, if any human being knew, what work was "Shakespeare's"! On Mr. Greenwood's hypothesis, or "supposing," the Unknown Author "may well have conceived the idea of publishing a collected edition of the plays which had been written" (not "published," *written*) "under the name of Shakespeare, and, being himself busy with other matters, he may have entrusted the business to" some "good pen," "and why not to" — Ben. Nevertheless "a very large part of that volume consists of work that is not 'Shakespeare's' at all." How did this occur? The book is "that very doubtful 'canon.'" How, if "Shakespeare's" man edited it for "Shakespeare"? Did "Shakespeare" not care what stuff was placed under his immortal "*nom de plume*"?

It is not my fault if I think that Mr. Greenwood's hypotheses — the genuine "Shakespeare" either revised his own works, or put Ben on the editorial task — are absolutely contradicted by his statements in another part of his book. For the genuine "Shakespeare" knew what plays he had written, knew what he could honestly put forth as his own, as "Shakespeare's." Or, if he placed the task of editing in Ben's hands, he must have told Ben what plays were of his own making. In either case the Folio would contain these, and no others. But— "the *plat contraire*," — the very reverse, — is stated by Mr. Greenwood. "It stands admitted that a very large portion of that volume" (the Folio) "consists of work that is not 'Shakespeare's'" (is not Bacon's, or the other man's) "at all." Then away fly the hypotheses that the auto-Shakespeare, or that Ben, employed by the auto-Shakespeare (apparently Bacon) revised, edited, and prepared for publication the auto-Shakespearean plays. For Mr. Greenwood "has already dealt with *Titus* (*Andronicus*) and *Henry VI*," and proved them not to be auto-Shakespearean — and he adds "there are many other plays in that very doubtful

'canon'" (the Folio) "which, by universal admission, contain much non-Shakespearean composition." Perhaps! but if so the two hypotheses, that either the genuine Shakespeare revised ("is it not a more natural solution that 'Shakespeare' himself revised his works for publication, and that some part, at any rate, of this revision was done after 1616 and before 1623?"), or that he gave Ben (who was working, by the conjecture, for Bacon) the task of editing the Folio, — are annihilated. For neither the auto-Shakespeare (if honest), nor Ben (if sober), could have stuffed the Folio full of non-Shakespearean work, — including four "non-Shakespearean" plays, — nor could the Folio be "that very doubtful canon." Again, if either the auto-Shakespeare or Ben following his instructions, were Editor, neither could have, as the Folio Editor had "evidently no little doubt about" *Troilus and Cressida*.

Neither Ben, nor the actual Simon Pure, the author, the auto-Shakespeare, could fail to know the truth about *Trodus and Cressida*. But the Editor did *not* know the truth, the whole canon is "doubtful." Therefore the hypothesis, the "supposing," that the actual author did the revising, and the other hypothesis that he gave Ben the work, seem to me wholly impossible. But Mr. Greenwood needs the "supposings" of p, 293; and as he rejects *Titus Andronicus* and *Henry VI* (both in the Folio), he also needs the contradictory views of p, 358. On which set of supposings and averments does he stand to win?

Perhaps he thinks to find a way out of what appears to me to be a dilemma in the following fashion: He will not accept *Titus Andronicus* and *Henry VI*, though both are in the Folio, as the work of *his* "Shakespeare," his Unknown, the Bacon of the Baconians. Well, we ask, if your Unknown, or Bacon, or Ben, — instructed by Bacon, or by the Unknown, — edited the Folio, how could any one of the three insert *Titus*, and *Henry VI*, and be "in no little doubt about" *Troilus and Cressida*? Bacon, or the Unknown, or the Editor employed by either, knew perfectly well which plays either man could honestly claim as his own work, done under the "*nom de plume*" of "William Shakespeare" (with or without the hyphen). Yet the Editor of the Folio does not know — and Mr. Greenwood does know — *Henry VI* and *Titus* are "wrong ones."

Mr. Greenwood's way out, if I follow him, is this: "Judge Stotsenburg asks, 'Who wrote *The Taming of a Shrew* printed in 1594, and who wrote *Titus Andronicus*, *Henry VI*, or *King Lear* referred to in the Diary?'" (Henslowe's). The Judge continues: "Neither Collier nor any of the Shaxper commentators make (*sic*) any claim to their authorship in behalf of William Shaxper. Since these plays have the same names as those included in the Folio of 1623 the presumption is that they are the same plays until the contrary is shown. Of course it may be shown, either that those in the Folio are entirely different except in name, or that these plays were revised, improved, and dressed by some one whom they" (who?) "called Shakespeare."

Mr. Greenwood says, "My own conviction is that . . . these plays were 'revised, improved, and dressed by some one whom they called Shakespeare.'" (Whom *who* called Shakespeare?) In that case these plays, — say *Titus Andronicus* and *Henry VI*, Part 1, — which Mr. Greenwood denies to *his* "Shakespeare" were just as much *his* Shakespeare's plays as any other plays (and there are several), which *his* Shakespeare "revised, improved, and dressed." Yet *his* Shakespeare is *not* author of *Henry VI*, not the author of *Titus Andronicus*. "Mr. Anders," writes Mr. Greenwood, "makes what I think to be a great error in citing *Henry VI* and *Titus* as genuine plays of Shakespeare."

He hammers at this denial in nineteen references in his Index to *Titus Andronicus*. Yet Ben, or Bacon, or the Unknown thought that these plays *were* "genuine plays" of "Shakespeare," the concealed author — Bacon or Mr. Greenwood's man. It appears that the immense poet who used the "*nom de plume*" of "Shakespeare" did not know the plays of which he could rightfully call himself the author; that (not foreseeing Mr. Greenwood's constantly repeated objections) he boldly annexed four plays, or two certainly, which Mr. Greenwood denies to him, and another about which "the Folio Editor was in no little doubt."

Finally, Mr. Greenwood is "convinced," "it is my conviction" that some plays which he often denies to his "Shakespeare" were "revised, improved, and dressed by some one whom they called Shakespeare." That some one, if he

edited or caused to be edited the Folio, thought that his revision, improvement, and dressing up of the plays gave him a right to claim their authorship — and Mr. Greenwood, a dozen times and more, denies to him their authorship.

One is seriously puzzled to discover the critic's meaning. *The Taming of a Shrew*, *Titus*, *Henry VI*, and *King Lear*, referred to in Henslowe's "Diary," are not "Shakespearean," we are repeatedly told. But "my own conviction is that . . . " these plays were "revised, improved, and dressed by some one whom they called Shakespeare." But to be revised, improved, and dressed by some one whom they called Shakespeare, is to be as truly "Shakespearean" work as is any play so handled "by Shakespeare." Thus the plays mentioned are as truly "Shakespearean" as any others in which "Shakespeare" worked on an earlier canvas, and also *Titus* "is not *Shakespearean* at all." Mr. Greenwood, I repeat, constantly denies the "Shakespearean" character to *Titus* and *Henry VI*. "The conclusion of the whole matter is that *Titus* and *The Trilogy of Henry VI* are not the work of Shakespeare: that his hand is probably not to be found at all in *Titus*, and only once or twice, if at all, in *Henry VI*, Part I, but that he it probably was who altered and remodelled the two parts of the old *Contention of the Houses of York and Lancaster*, thereby producing *Henry VI*, Parts II and III."

Yet *Titus* and *Henry VI* appear as "revised, improved, and dressed" by the mysterious "some one whom they called Shakespeare." If Mr. Greenwood's conclusion be correct, "Shakespeare" had no right to place *Henry VI*, Part I, and *Titus* in his Folio. If his "conviction" be correct, Shakespeare had as good a right to them as to any of the plays which he revised, and improved, and dressed. They *must* be "Shakespearean" if Mr. Greenwood is right in his suggestion that "Shakespeare" either revised his works for publication between 1616 and 1623, or set his man, Ben Jonson, upon that business. Yet neither one nor the other knew what to make of *Troilus and Cressida*. "The Folio Editor had, evidently, no little doubt about that play."

So neither "Shakespeare" nor Ben, instructed by him, can have been "the Folio Editor." Consequently Mr. Greenwood must abandon his suggestion that either man was the Editor, and may return to his rejection of *Titus* and *Henry VI*,

Part I. But he clings to it. He finds in Henslowe's Diary "references to, and records of the writing of, such plays" as, among others, *Titus Andronicus*, and *Henry VI*.

Mr. Greenwood, after rejecting a theory of some one, says, "Far more likely does it appear that there was a great man of the time whose genius was capable of 'transforming dross into gold,' who took these plays, and, in great part, rewrote and revised them, leaving sometimes more, and sometimes less of the original work; and that so rewritten, revised, and transformed they appeared as the plays of 'Shakespeare.'"

This statement is made about "these plays," including *Titus Andronicus* and *Henry VI*, while "*Titus* and the *Trilogy of Henry VI* are not the work of Shakespeare . . . his hand is probably not to be found at all in *Titus*, and only once or twice in *Henry VI*, Part I," though he probably made Parts II and III out of older plays.

I do not know where to have the critic. If *Henry VI*, Part I, and *Titus* are in no sense by "Shakespeare," then neither "Shakespeare" nor Ben for him edited or had anything to do with the editing of the Folio. If either or both had to do with the editing, as the critic suggests, then he is wrong in denying Shakespearean origin to *Titus* and *Henry VI*, Part I.

Of course one sees a way out of the dilemma for the great auto-Shakespeare himself, who, by one hypothesis, handed over the editing of his plays to Ben (*he*, by Mr. Greenwood's "supposing," was deviling at literary jobs for Bacon). The auto-Shakespeare merely tells Ben to edit his plays, and never even gives him a list of them. Then Ben brings him the Folio, and the author looks at the list of Plays.

"Mr. Jonson," he says, "I have hitherto held thee for an honest scholar and a deserving man in the quality thou dost profess. But thou hast brought me a maimed and deformed printed copy of that which I did write for my own recreation, not wishful to be known for so light a thing as a poet. Moreover, thou hast placed among these my trifles, four plays to which I never put a finger, and others in which I had no more than a thumb. The Seneschal, Mr. Jonson,

will pay thee what is due to thee; thy fardels shall be sent whithersoever thou wilt, and, Mary! Mr. Jonson, I bid thee never more be officer of mine."

This painful discourse must have been held at Gorhambury, — if Ben edited the Folio — for Francis.

It is manifest, I hope, that about the Folio Mr. Greenwood speaks with two voices, and these very discordant. It is also manifest that, whoever wrote the plays left his materials in deep neglect, and that, when they were collected, some one gathered them up in extreme disorder. It is extraordinary that the Baconians and Mr. Greenwood do not see the fallacy of their own reasoning in this matter of the Folio. They constantly ridicule the old view that the actor, Will Shakspere (if, by miracle, he were the author of the plays), could have left them to take their fortunes. They are asked, what did other playwrights do in that age? They often parted with their whole copyright to the actors of this or that company, or to Henslowe. The new owners could alter the plays at will, and were notoriously anxious to keep them out of print, lest other companies should act them. As Mr. Greenwood writes, "Such, we are told, was the universal custom with dramatists of the day; they 'kept no copies' of their plays, and thought no more about them. It will, I suppose, be set down to fanaticism that I should doubt the truth of this proposition, that I doubt if it be consonant with the known facts of human nature." But whom, except Jonson, does Mr. Greenwood find editing and publishing his plays? Beaumont, Fletcher, Heywood? No!

If the Great Unknown were dead in 1623, his negligence was as bad as Will's. If he were alive and revised his own work for publication, he did it as the office cat might have done it in hours of play. If, on the other side, he handed the editorial task over to Ben, then he did not even give Ben a list of his genuine works. Mr. Greenwood cites the case of Ben Jonson, a notorious and, I think, solitary exception. Ben was and often proclaimed himself to be essentially a scholar. He took as much pains in prefacing, editing, and annotating his plays, as he would have taken had the texts been those of Greek tragedians.

Finally, all Baconians cry out against the sottish behaviour of the actor, Will, if being really the author of the plays, he did not bestir himself, and bring them out in a collected edition. Yet no English dramatist ventured on doing such a thing, till Ben thus collected his "works" (and was laughed at) in 1616. The example might have encouraged Will to be up and doing, but he died early in 1616. If Will were *not* the author, what care was Bacon, or the Unknown, taking of his many manuscript plays, and for the proper editing of those which had appeared separately in pamphlets? As indolent and casual as Will, the great Author, Bacon or another, left the plays to take their chances. Mr. Greenwood says that "*if the author*" (Bacon or somebody very like him) "*had been careless about keeping copies of his manuscripts* . . . " What an "if" in the case of the great Author! This gross neglect, infamous in Will, may thus have been practised by the Great Unknown himself.

In 1911 Mr. Greenwood writes, "There is overwhelming authority for the view that *Titus Andronicus* is not *Shakespearean* at all." In that case, neither Bacon, nor the Unknown, nor Ben, acting for either, can have been the person who put *Titus* into the Folio.

XII. BEN JONSON AND SHAKESPEARE

The evidence of Ben Jonson to the identity of Shakespeare the author with Shakspere the actor, is "the strength of the Stratfordian faith," says Mr. Greenwood. "But I think it will be admitted that the various Jonsonian utterances with regard to 'Shakespeare' are by no means easy to reconcile one with the other."

It is difficult to reply briefly to Mr. Greenwood's forty-seven pages about the evidence of Jonson. But, first, whenever in written words or in reported conversation, Ben speaks of Shakespeare by name, he speaks of his *works*: in 1619 to Drummond of Hawthornden; in 1623 in commendatory verses to the Folio; while, about 1630, probably, in his posthumously published *Discourses*, he writes on Shakespeare as the friend and "fellow" of the players, on Shakespeare as his own friend, and as a dramatist. On each of these three occasions, Ben's *tone* varies. In 1619 he said no more to Drummond of Hawthornden (apparently on two separate occasions) than that Shakespeare "lacked art," and made the mistake about a wreck on the sea-coast of Bohemia.

In 1619, Ben spoke gruffly and briefly of Shakespeare, as to Drummond he also spoke disparagingly of Beaumont, whom he had panegyrised in an epigram in his own folio of 1616, and was again to praise in the commendatory verses in the Folio. He spoke still more harshly of Drayton, whom in 1616 he had compared to Homer, Virgil, Theocritus, and Tyræus! He told an unkind anecdote of Marston, with whom he had first quarrelled and then made friends, collaborating with him in a play; and very generously and to his great peril, sharing his imprisonment. To Drummond, Jonson merely said that he "beat Marston and took away his pistol." Of Sir John Beaumont, brother of the dramatist, Ben had written a most hyperbolical eulogy in verse; luckily for Sir John, to Drummond Ben did not speak of him. Such was Ben, in panegyric verse hyperbolical; in conversation "a despiser of others, and praiser of himself." Compare Ben's three remarks about Donne, all made to Drummond.

Donne deserved hanging for breaking metre; Donne would perish for not being understood: and Donne was in some points the first of living poets.

Mr. Greenwood's effort to disable Jonson's evidence rests on the contradictions in his estimates of Shakespeare's poetry, in notices scattered through some thirty years. Jonson, it is argued, cannot on each occasion mean Will. He must now mean Will, now the Great Unknown, and now — both at once. Yet I have proved that Ben was the least consistent of critics, all depended on the occasion, and on his humour at the moment. This is a commonplace of literary history. The Baconians do not know it; Mr. Greenwood, if he knows it, ignores it, and bases his argument on facts which may be unknown to his readers. We have noted Ben's words of 1619, and touched on his panegyric of 1623. Thirdly, about 1630 probably, Ben wrote in his manuscript book *Discourses* an affectionate but critical page on Shakespeare as a man and an author. Always, in prose, and in verse, and in recorded conversation, Ben explicitly identified Shakspere (William, of Stratford) with the author of the plays usually ascribed to him. But the Baconian Judge Webb (in extreme old age), and the anti-Shakespearean Mr. Greenwood and others, choose to interpret Ben's words on the theory that, in 1623, he "had his tongue in his cheek"; that, like Odysseus, he "mingled things false with true," that *they* know what is true from what is false, and can undo the many knots which Ben tied in his tongue. How they succeed we shall see.

In addition to his three known mentions of Shakespeare by name (1619, 1623, 1630?), Ben certainly appears to satirise his rival at a much earlier date; especially as Pantalabus, a playwright in *The Poetaster* (1601), and as actor, poet, and plagiarist in an epigram, *Poet-Ape*, published in his collected works of 1616; but probably written as early as 1602. It is well known that in 1598 Shakespeare's company acted Ben's *Every Man in His Humour*. It appears that he conceived some grudge against the actors, and apparently against Shakespeare and other playwrights, for, in 1601, his *Poetaster* is a satire both on playwrights and on actors, whom he calls "apes." The apparent attacks on Shakespeare are just such as Ben, if angry and envious, would direct against

him; while we know of no other poet-player of the period to whom they could apply. For example, in *The Poetaster*, Histrio, the actor, is advised to ingratiate himself with *Pantalabus*, "gent'man parcel-poet, his father was a man of worship, I tell thee." This is perhaps unmistakably a blow at Shakespeare, who had recently acquired for his father and himself arms, and the pleasure of writing himself "gentleman." This "parcel-poet gent'man" "pens lofty, in a new stalking style," — he is thus an author, he "pens," and in a high style. He is called *Pantalabus*, from the Greek words for "to *take up all*," which means that, as poet, he is a plagiarist. Jonson repeats this charge in his verses called *Poet-Ape* —

"*He takes up all*, makes each man's wit his own,
And told of this, he slights it."

In a scene added to *The Poetaster* in 1616, the author (Ben) is advised not

"With a sad and serious verse to wound
Pantalabus, railing in his saucy jests,"

and obviously slighting the charges of plagiarism. Perhaps Ben is glancing at Shakespeare, who, if accused of plagiary by an angry rival, would merely laugh.

A reply to the *Poetaster*, namely *Satiromastix* (by Dekker and Marston?), introduces Jonson himself as babbling darkly about "Mr. Justice Shallow," and "an Innocent Moor" (Othello?). Here is question of "administering strong pills" to Jonson; *then*,

"What lumps of hard and indigested stuff,
Of bitter *Satirism*, of *Arrogance*,
Of *Self-love*, of *Detraction*, of a black
And stinking *Insolence* should we fetch up!"

This “pill” is a reply to Ben’s “purge” for the poets in his *Poetaster*. Oh, the sad old stuff!

Referring to Jonson’s *Poetaster*, and to *Satiromastix*, the counter-attack, we find a passage in the Cambridge play, *The Return from Parnassus* (about 1602). Burbage, the tragic actor, and Kempe, the low-comedy man of Shakespeare’s company, are introduced, discussing the possible merits of Cambridge wits as playwrights. Kempe rejects them as they “smell too much of that writer Ovid, and that writer Metamorphosis . . . “ The purpose, of course, is to laugh at the ignorance of the low-comedy man, who thinks “Metamorphosis” a writer, and does not suspect — how should he? — that Shakespeare “smells of Ovid.” Kempe innocently goes on, “Why, here’s our fellow” (comrade) “Shakespeare puts them all down” (all the University playwrights), “aye, and Ben Jonson too. O that Ben Jonson is a pestilent fellow, he brought up Horace” (in *The Poetaster*) “giving the poets a pill, but our fellow Shakespeare hath given him a purge . . .”

The Cambridge author, perhaps, is thinking of the pill (not purge) which, in *Satiromastix*, might be administered to Jonson. The Cambridge author may have thought that Shakespeare wrote the passage on the pill which was to “fetch up” masses of Ben’s insolence, self-love, arrogance, and detraction. If this be not the sequence of ideas, it is not easy to understand how or why Kempe is made to say that Shakespeare has given Jonson a purge. Stupid old nonsense! There are other more or less obscure indications of Jonson’s spite, during the stage-quarrel, against Shakespeare, but the most unmistakable proof lies in his verses in “Poet-Ape.” I am aware that Ben’s intention here to hit at Shakespeare has been denied, for example by Mr. Collins with his usual vigour of language. But though I would fain agree with him, the object of attack can be no known person save Will. Jonson was already, in *The Poetaster*, using the term “*Poet-Ape*,” for he calls the actors at large “apes.”

Jonson thought so well of his rhymes that he included them in the Epigrams of his first Folio (1616). By that date, the year of Shakespeare’s death, if he really loved Shakespeare, as he says, in verse and prose, Ben might have

suppressed the verses. But (as Drummond noted) he preferred his jest, such as it was, to his friend; who was not, as usually understood, a man apt to resent a very blunt shaft of very obsolete wit. Like Molière, Shakespeare had outlived the charge of plagiarism, made long ago by the jealous Ben.

Poet-Ape is an actor-playwright "*that would be thought our chief*" — words which, by 1601, could only apply to Shakespeare; there was no rival, save Ben, near his throne. The playwright-actor, too, has now confessedly

"grown
To a little wealth and credit in the scene,"

of no other actor-playwright could this be said.

He is the author of "works" (Jonson was laughed at for calling his own plays "works"), but these works are "the frippery of wit," that is, a tissue of plagiarisms, as in the case of *Pantalabus*. But "told of this he slights it," as most successful authors, when accused, as they often are, of plagiarism by jealous rivals, wisely do; — so did Molière. This Poet-Ape began his career by "picking and gleaning" and "buying reversions of old plays." This means that Shakespeare *did* work over earlier plays which his company had acquired; or, if Shakespeare did not, — then, I presume, — Bacon did!

That, with much bad humour, is the gist of the rhymes on Poet-Ape. Ben thinks Shakespeare's "works" very larcenous, but still, the "works," as such, are those of the poet-actor. I hope it is now clear that Poet-Ape, who, like *Pantalabus*, "takes up all"; who has "grown to a little wealth and credit in the scene," and who "thinks himself the chief" of contemporary dramatists, can be nobody but Shakespeare. Hence it follows that the "works" of Poet-Ape, are the works of Shakespeare. Ben admits, nay, asserts the existence of the works, says that they may reach "the after-time," but he calls them a mass of plagiarisms, — because he is in a jealous rage.

But this view does not at all suit Mr. Greenwood, for it shows Ben regarding Shakespeare as the "Ape," or Actor, and also as the "Poet" and author of the

"works." Yet Ben's words mean nothing if not that an actor is the author of works which Ben accuses of plagiarism. Mr. Greenwood thinks that the epigram proves merely that "Jonson looked upon Shakspere (if, indeed, he refers to him) as one who put forward the writings of others as his own, or, in plain English, an impostor." "The work which goes in his name is, in truth, the work of somebody else." Mr. Greenwood put the same interpretation on Greene's words about "Shakescene," and we showed that the interpretation was impossible. "The utmost we should be entitled to say" (if Shakescene be meant for Shakspere) "is that Greene accuses Player Shakspere of putting forward, as his own, some work or perhaps some parts of a work, for which he was really indebted to another." We proved, by quoting Greene's words, that he said nothing which could be tortured into this sense. In the same way Ben's words cannot be tortured into the sense that "the work which goes in his" (Poet-Ape's) "name is, in truth, the work of somebody else." Mr. Greenwood tries to find the Anti-Willian hypothesis in Greene's *Groatsworth of Wit* and in Ben's epigram. It is in neither.

Jonson is not accusing Shakespeare of pretending to be the author of plays written by somebody else, but of "making *each man's* wit his own," and the *men* are the other dramatists of the day. Thus the future "may judge" Shakespeare's work "to be his as well as *ours*."

It is "we," the living and recognised dramatists, whom Shakespeare is said to plagiarise from; so boldly that

"*We*, *the robbed*, leave rage, and pity it."

Ben does not mean that Shakespeare is publishing, as his own, whole plays by some other author, but that his works are tissues of scraps stolen from his contemporaries, from "us, the robbed." Where are to be found or heard of any works by a player-poet of 1601, the would-be chief dramatist of the day, except those signed William Shak(&c.). There are none, and thus Ben, at this date, is identifying Will Shakspere, the actor, with the author of the Shakespearean plays, which he expects to reach posterity; "after times may judge them to be his," as after times do to this hour.

Thus Ben expresses, in accordance with his humour on each occasion, most discrepant opinions of Will's works, but he never varies from his identification of Will with the author of the plays.

The "works" of which Ben wrote so splenetically in *Poet-Ape*, were the works of a Playwright-Actor, who could be nobody but the actor Shakespeare, as far as Ben then knew. If later, and in altered circumstances, he wrote of the very same works in very different terms, his "utterances" are "not easily reconcilable" with each other, — *whoever* the real author of the works may be. If Bacon, or Mr. Greenwood's anonymous equivalent for Bacon, were the author, and if Ben came to know it, his attitudes towards the *works* are still as irreconcilable as ever.

Perhaps Baconians and Mr. Greenwood might say, "as long as Ben believed that the works were those of an Actor-Playwright, he thought them execrable. But when he learned that they were the works of Bacon (or of some Great One), he declared them to be more than excellent" — *but not to Drummond*. I am reluctant to think that Jonson was the falsest and meanest of snobs. I think that when his old rival, by his own account his dear friend, was dead, and when (1623) Ben was writing panegyric verses about the first collected edition of his plays (the Folio), then between generosity and his habitual hyperbolical manner when he was composing commendatory verses, he said, — not too much in the way of praise, — but a good deal more than he later said (1630?), in prose, and in cold blood. I am only taking Ben as I find him and as I understand him. Every step in my argument rests on well-known facts. Ben notoriously, in his many panegyric verses, wrote in a style of inflated praise. In conversation with Drummond he censured, in brief blunt phrases, the men whom, in verse, he had extolled. The Baconian who has not read all Ben's panegyrics in verse, and the whole of his conversations with Drummond, argues in ignorance.

We now come to Ben's panegyrics in the Folio of 1623. Ben heads the lines,

"TO THE MEMORY OF MY BELOVED
THE AUTHOR
MR. WILLIAM SHAKESPEARE

MR. WILLIAM SHAKESPEARE
AND
WHAT HE HATH LEFT US."

Words cannot be more explicit. Bacon was alive (I do not know when Mr. Greenwood's hidden genius died), and Ben goes on to speak of the Author, Shakespeare, as dead, and buried. He calls on him thus:

"Soul of the Age!
The applause! delight! the wonder of our Stage!
My Shakespear rise: I will not lodge thee by
Chaucer, or Spenser, or bid Beaumont lie
A little further, to make thee a room:
Thou art a monument, without a tomb,
And art alive still, while thy book doth live,
And we have wits to read, and praise to give."

Beaumont, by the way, died in the same year as Shakespeare, 1616, and, while Ben here names him with Chaucer, Spenser, and Shakespeare, his contemporaries have left no anecdotes, no biographical hints. In the panegyric follow the lines:

"And though thou hadst small Latin and less Greek,
From thence to honour thee I would not seek
For names, but call forth thund'ring Æschylus,"

and the other glories of the Roman and Attic stage, to see and hear how Shakespeare bore comparison with all that the classic dramatists did, or that "did from their ashes come."

Jonson means, "despite your lack of Greek and Latin I would not shrink from challenging the greatest Greek and Roman tragedians to see how you bear comparison with themselves"?

Mr. Greenwood and the Baconians believe that the author of the plays abounded in Latin and Greek. In my opinion his classical scholarship must have seemed slight indeed to Ben, so learned and so vain of his learning: but this is part of a vexed question, already examined. So far, Ben's verses have brought not a hint to suggest that he does not identify the actor, his Beloved, with the author. Nothing is gained when Ben, in commendatory verses, praises "Thy Art," whereas, speaking to Drummond of Hawthornden (1619), he said that Shakespeare "wanted art." Ben is not now growling to Drummond of Hawthornden: he is writing a panegyric, and applauds Shakespeare's "well-turned and true-filed lines," adding that, "to write a living line" a man "must sweat," and "strike the second heat upon the Muses' anvil."

To produce such lines requires labour, requires conscious "art." So Shakespeare *had* "art," after all, despite what Ben had said to Drummond: "Shakespeare lacked art." There is no more in the matter; the "inconsistency" is that of Ben's humours on two perfectly different occasions, now grumbling to Drummond; and now writing hyperbolically in commendatory verses. But the contrast makes Mr. Greenwood exclaim, "Can anything be more astonishing and at the same time more unsatisfactory than this?"

Can anything be more like Ben Jonson?

Did he know the secret of the authorship in 1619? If so, why did he say nothing about the plays of the Great Unknown (whom he called Shakespeare), save what Drummond reports, "want of art," ignorance of Bohemian geography. Or did Ben *not* know the secret till, say, 1623, and then heap on the very works which he had previously scouted praise for the very quality which he had said they lacked? If so, Ben was as absolutely inconsistent, as before. There is no way out of this dilemma. On neither choice are Ben's utterances "easy to reconcile one with the other," except on the ground that Ben was — Ben, and his comments varied with his varying humours and occasions. I believe that, in the commendatory verses, Ben allowed his Muse to carry him up to heights of hyperbolical praise which he never came near in cold blood. He was warmed

with the heat of poetic composition and wound up to heights of eulogy, though even *now* he could not forget the small Latin and less Greek!

We now turn to Mr. Greenwood's views about the commendatory verses. On mature consideration I say nothing of his remarks on Ben's couplets about the bad engraved portrait. They are concerned with the supposed "*original* bust," as represented in Dugdale's engraving of 1656. What the Baconians hope to make out of "the *original* bust" I am quite unable to understand. Again, I leave untouched some witticisms on Jonson's lines about Spenser, Chaucer, and Beaumont in their tombs — lines either suggested by, or suggestive of others by an uncertain W. Basse, "but the evidence of authorship seems somewhat doubtful. How the date is determined I do not know . . . " As Mr. Greenwood knows so little, and as the discussion merely adds dust to the dust, and fog to the mist of his attempt to disable Ben's evidence, I glance and pass by.

"Then follow these memorable words, which I have already discussed:

"'And though thou hadst small Latin and less Greek . . . '"

In "these memorable words," every non-Baconian sees Ben's opinion about his friend's lack of scholarship. According to his own excellent Index, Mr. Greenwood has already adverted often to "these memorable words."

(1) P. 40. " . . . if this testimony is to be explained away as not seriously written, then are we justified in applying the same methods of interpretation to Jonson's other utterances as published in the Folio of 1623. But I shall have more to say as to that further on."

(2) P. 88. Nothing of importance.

(3) P. 220. Quotation from Dr. Johnson. Ben, "who had no imaginable temptation to falsehood," wrote the memorable words. But Mr. Greenwood has to imagine a "temptation to falsehood," — and he does.

(4) P. 222. "And we have recognised that Jonson's 'small Latin and less Greek' must be explained away" (a quotation from somebody).

(5) P. 225. Allusion to anecdote of "Latin (latten) spoons."

(6) P, 383. "Some of us" (some of whom?) "have long looked upon it as axiomatic . . . that Jonson's 'small Latin and less Greek,' if meant to be taken

seriously, can only be applicable to Shakspere of Stratford and not to Shakespeare," that is, not to the Unknown author. Unluckily Ben, in 1623, is addressing the shade of the "sweet Swan of Avon," meaning Stratford-on-Avon.

(7) The next references in the laudable Index are to p, 475. "Then follow these memorable words, which I have already discussed:

"'And though thou hadst small Latin and less Greek,'

words which those who see how singularly inappropriate they are to the author of the *Plays* and *Poems* of Shakespeare have been at such infinite pains to explain away without impeaching the credit of the author, or assuming that he is here indulging in a little Socratic irony."

I do not want to "explain" Ben's words "away": I want to know how on earth Mr. Greenwood explains them away. My view is that Ben meant what he said, that Will, whose shade he is addressing, was no scholar (which he assuredly was not). I diligently search Mr. Greenwood's scriptures, asking How does he explain Ben's "memorable words" away? On of *The Shakespeare Problem Restated* I seem to catch a glimmer of his method. "Once let the Stratfordians" (every human and non-Baconian person of education) "admit that Jonson when he penned the words 'small Latin and less Greek' was really writing 'with his tongue in his cheek.' . . ."

Once admit that vulgarism concerning a great English poet engaged on a poem of Pindaric flight, and of prophetic vision! No, we leave the admission to Mr. Greenwood and his allies.

To consider thus is to consider too seriously. The Baconians and Anti-Willians have ceased to deserve serious attention (if ever they did deserve it), and virtuous indignation, and all that kind of thing, when they ask people who care for poetry to "admit" that Ben wrote his verses "with his tongue in his cheek." Elsewhere, in place of Ben's "tongue in his cheek," Mr. Greenwood prefers to suggest that Ben "is here indulging in a little Socratic irony." Socrates "with his tongue in his cheek"! Say "talking through his throat," if one may accept the evidence of the author of *Raffles*, as to the idioms of burglars.

To return to criticism, we are to admit that Jonson was really writing "with his tongue in his cheek," knowing that, as a fact, "*Shakespeare*" (the Great Unknown, the Bacon of the Baconians) "had remarkable classical attainments, and they, of course, open the door to the suggestion that the entire poem is capable of an ironical construction and esoteric interpretation."

So this is Mr. Greenwood's method of "explaining away" the memorable words. He seems to conjecture that Will was not *Shakespeare*, not the author of the plays; that Jonson knew it; that his poem is, as a whole, addressed to Bacon, or to the Great Unknown, under his "*nom de plume*" of "William Shakespeare"; that the address to the "Swan of Avon" is a mere blind; and that Ben only alludes to his "Beloved," the Stratford actor, when he tells his Beloved that his Beloved has "small Latin and less Greek." All the praise is for Bacon, or the Great Unknown (Mr. Harris), the jeer is for "his Beloved, the Author, Mr. William Shakespeare, And what he hath left Us."

As far as I presume to understand this theory of the "tongue in the cheek," of the "Socratic irony," this is what Mr. Greenwood has to propose towards "explaining away" the evidence of Ben Jonson, in his famous commendatory verses. When we can see through the dust of words we find that the "esoteric interpretation" of the commendatory verses is merely a reassertion of the general theory: a man with small Latin and less Greek could not have written the plays and poems. Therefore when Ben explicitly states that his Beloved, Mr. Shakespeare of Stratford, the Swan of Avon *did* write the plays, and had small Latin and less Greek, Ben meant that he did *not* write them, that they were written by somebody else who had plenty of Greek and Latin. It is a strange logical method! Mr. Greenwood merely reasserts his paradox, and proves it, like certain Biblical critics of more orthodoxy than sense, by aid of his private "esoteric method of interpretation." Ben, we say, about 1630, in prose and in cold blood, and in a humour of criticism without the old rancour and envy, or the transitory poetic enthusiasm, pens a note on Shakespeare in a volume styled "Timber, or Discoveries, made upon men and Matter, as they have flowed out of his daily Readings; or had their reflux to his peculiar Notion of the Times." Ben

died in 1637; his MS. collection of notes and brief essays, and reflections, was published in 1641. Bacon, of whom he wrote his impressions in this manuscript, had died in 1626. Ben was no longer young: he says, among these notes, that his memory, once unusually strong, after he was past forty "is much decayed in me . . . It was wont to be faithful to me, but shaken with age now . . ." (I copy the extract as given by Mr. Greenwood.) He spoke sooth: he attributes to Orpheus, in "Timber," a line from Homer, and quotes from Homer what is not in that poet's "works."

In this manuscript occurs, then, a brief prose note, headed, *De Shakespeare nostrati*, on our countryman Shakespeare. It is an anecdote of the Players and their ignorance, with a few critical and personal remarks on Shakespeare. "I remember the players have often mentioned it as an honour to Shakespeare that (whatsoever he penned) he never blotted out a line. My answer hath been, 'Would he had blotted a thousand,' which they thought a malevolent speech. I had not told posterity this but for their ignorance who chose that circumstance to commend their friend by (that) wherein he most faulted; and to justify mine own candour, for I loved the man, and do honour his memory on this side idolatry as much as any. He was, indeed, honest, and of an open and free nature; had an excellent phantasy, brave notions and gentle expressions, wherein he flowed with that facility that sometimes it was necessary he should be stopped. '*Sufflaminandus erat*,' as Augustus said of Haterius. His wit was in his own power; would the rule of it had been so too! Many times he fell into those things could not escape laughter, as when he said in the person of Cæsar, one speaking to him, 'Cæsar, thou dost me wrong.' He replied, 'Cæsar did never wrong but with just cause'; and such like, which were ridiculous. But he redeemed his vices with his virtues. There was ever more in him to be praised than to be pardoned." Baconians actually maintain that Ben is here speaking of Bacon.

Of whom is Ben writing? Of the author of *Julius Cæsar*, — certainly, from which, his memory failing, he misquotes a line. If Ben be in the great secret — that the author was Bacon, or Mr. Greenwood's Great Unknown, he is here no more enthusiastic about the Shadow or the Statesman, than about Shakespeare;

no less cool and critical, whoever may be the subject of his comments. Whether, in the commendatory verses, he referred to the Actor-Author, or Bacon, or the Shining Shadow, or all of them at once, he is now in a mood very much more cool and critical. If to be so cool and critical is violently inconsistent in the case of the Stratford actor, it is not less so if Ben has Bacon or the Shadow in his mind. Meanwhile the person of whom he speaks *is here the actor-author*, whom the players, his friends, commended "wherein he faulted," namely, in not "blotting" where, in a thousand cases, Ben wishes that he *had* blotted. Can the most enthusiastic Baconian believe that when Ben wrote about the players' ignorant applause of Shakespeare's, of their friend's lack of care in correction, Ben had Bacon in his mind?

As for Mr. Greenwood, he says that in Ben's sentence about the players and their ignorant commendation, "we have it on Jonson's testimony that the players looked upon William Shakspere the actor as the author of the plays and praised him for never blotting out a line." We have it, and how is the critic to get over or round the fact? Thus, "We know that this statement" (about the almost blotless lines) "is ridiculous; that if the players had any unblotted manuscripts in their hands (which is by no means probable) they were merely fair copies . . ."

Perhaps, but the Baconians appear to assume that a "fair copy" is not, and cannot be, a copy in the handwriting of the author.

As I have said before, the Players knew Will's handwriting, if he could write. If they received his copy in a hand not his own, and were not idiots, they could not praise him and his unerring speed and accuracy in penning his thoughts. If, on the other hand, Will could not write, in their long friendship with Will, the Players must have known the fact, and could not possibly believe, as they certainly did, "on Jonson's testimony" in his authorship.

To finish Mr. Greenwood's observations, "if they" (the players) "really thought that the author of the plays wrote them off *currente calamo*, and never" (or "hardly ever") "blotted a line, never revised, never made any alterations, they knew nothing whatever concerning the real Shakespeare."

Nothing whatever? What they did not know was merely that Will gave them fair copies in his own hand, as, before the typewriting machine was invented, authors were wont to do. Within the last fortnight I heard the error attributed to the players made by an English scholar who is foremost in his own field of learning. He and I were looking at some of Dickens's MSS. They were full of erasions and corrections. I said, "How unlike Scott!" whose first draft of his novels exactly answered to the players' description of Will's "copy." My friend said, "Browning scarcely made an erasion or change in writing his poems," and referred to Mr. Browning's MSS. for the press, of which examples were lying near us. "But Browning must have made clean copies for the press," I said: which was as new an idea to my learned friend as it was undreamed of by the Players: — if what they received from him were his clean copies.

The Players' testimony, through Jonson, cannot be destroyed by the "easy stratagem" of Mr. Greenwood.

Mr. Greenwood now nearly falls back on Bacon, though he constantly professes that he "is not the advocate of Bacon's authorship." The author was some great man, as like Bacon as one pea to another. Mr. Greenwood says that Jonson looked on the issue of the First Folio "as a very special occasion." Well, it *was* a very special occasion; no literary occasion could be more "special." Without the Folio, badly as it is executed, we should perhaps never have had many of Shakespeare's plays. The occasion was special in the highest degree.

But, says Mr. Greenwood, "if we could only get to the back of Jonson's mind, we should find that there was some efficient cause operating to induce him to give the best possible sendoff to that celebrated venture."

Ben was much in the habit of giving "sendoffs" of great eloquence to poetic "ventures" now forgotten. What could "the efficient cause" be in the case of the Folio? At once Mr. Greenwood has recourse to Bacon; he cannot, do what he will, keep Bacon "out of the Memorial." Ben was with Bacon at Gorhambury, on Bacon's sixtieth birthday (January 22, 1621). Ben wrote verses about the Genius of the old house,

"Thou stand'st as if some mystery thou didst."

"What was that 'mystery'?" asks Mr. Greenwood. What indeed? And what has all this to do with Ben's commendatory verses for the Folio, two years later? Mr. Greenwood also surmises, as we have seen, that Jonson was with Bacon, helping to translate *The Advancement of Learning* in June, 1623.

Let us suppose that he was: what has that to do with Ben's verses for the Folio? Does Mr. Greenwood mean to hint that *Bacon* was the "efficient cause operating to induce" Ben "to give the best possible sendoff" to the Folio? One does not see what interest Bacon had in stimulating the enthusiasm of Ben, unless we accept Bacon as author of the plays, which Mr. Greenwood does not. If Mr. Greenwood thinks that Bacon was the author of the plays, then the facts are suitable to his belief. But if he does not,— "I hold no brief for the Baconians," he says, — how is all this passage on Ben's visits to Bacon concerned with the subject in hand?

Between the passage on some "efficient cause" "at the back of Ben's mind," and the passage on Ben's visits to Bacon in 1621–3, six pages intervene, and blur the supposed connection between the "efficient cause" of Ben's verses of 1623, and his visits to Bacon in 1621–3. These intercalary pages are concerned with Ben's laudations of Bacon, by name, in his *Discoveries*. The first is entirely confined to praise of Bacon as an orator. Bacon is next mentioned in a Catalogue of Writers as "*he who hath filled up all numbers*, and performed that in our tongue which may be preferred or compared either to *insolent Greece or haughty Rome*," words used of Shakespeare by Jonson in the Folio verses.

Mr. Greenwood remarks that Jonson's Catalogue, to judge by the names he cites (More, Chaloner, Smith, Sir Nicholas Bacon, Sidney, Hooker, Essex, Raleigh, Savile, Sandys, and so on), suggests that "he is thinking mainly of wits and orators of his own and the preceding generation," not of poets specially. This is obvious; why should Ben name Shakespeare with More, Smith, Chaloner, Eliot, Bishop Gardiner, Egerton, Sandys, and Savile? Yet "it is remarkable that no mention should be made of the great dramatist." Where is Spenser named, or Beaumont, or Chaucer, with whom Ben ranked Shakespeare? Ben quoted of Bacon the line he wrote long before of Shakespeare as a poet,

about “insolent Greece,” and all this is “remarkable,” and Mr. Greenwood finds it “not surprising” that the Baconians dwell on the “extraordinary coincidence of expression,” as if Ben were incapable of repeating a happy phrase from himself, and as if we should wonder at anything the Baconians may say or do.

Another startling coincidence is that, in *Discoveries*, Ben said of Shakespeare “his wit was in his own power,” and wished that “the rule of it had been so too.” Of Bacon, Ben wrote, “his language, where he could spare or pass by a jest, was nobly censorious.” Thus Bacon *had* “the rule of his own wit,” Bacon “*could* spare or pass by a jest,” whereas Shakespeare apparently could not — so like were the two Dromios in this particular! Strong in these convincing arguments, the Baconians ask (not so Mr. Greenwood, he is no Baconian), “were there then *two* writers of whom this description was appropriate . . . ?” Was there only one, and was it of Bacon, under the name of “Shakespeare,” that Ben wrote *De Shakespeare nostrati*?

Read it again, substituting “Bacon” for “Shakespeare.” “I remember the players,” and so on, and what has Bacon to do here? “Sometimes it was necessary that *Bacon* should be stopped.” “Many times *Bacon* fell into those things could not escape laughter,” such as Cæsar’s supposed line, “and such like, which were ridiculous.” “*Bacon* redeemed his vices with his virtues. There was ever more in *Bacon* to be praised than to be pardoned.”

Thus freely, according to the Baconians, speaks Ben of Bacon, whom he here styles “Shakespeare,” — Heaven knows why! while crediting him with the players as his friends. Ben could not think or speak thus of Bacon. Mr. Greenwood occupies his space with these sagacities of the Baconians; one marvels why he takes the trouble. We are asked why Ben wrote so little and that so cool (“I loved him on this side idolatry as much as any”) about Shakespeare. Read through Ben’s *Discoveries*: what has he to say about any one of his great contemporary dramatists, from Marlowe to Beaumont? He says nothing about any of them; though he had panegyrised them, as he panegyrised Beaumont, in verse. In his prose *Discoveries* he speaks, among English dramatists, of Shakespeare alone.

We are also asked by the Baconians to believe that his remarks on Bacon under the name of Shakespeare are really an addition to his more copious and infinitely more reverential observations on Bacon, named by his own name; "I have and do reverence him for the greatness that was only proper to himself." Also (where Bacon is spoken of as Shakespeare) "He redeemed his vices by his virtues. There was ever more in him to be praised than to be pardoned . . . Sometimes it was necessary that he should be stopped . . . Many times he fell into those things that could not escape laughter."

These two views of Bacon are, if you like, incongruous. The person spoken of is in both cases Bacon, say the Baconians, and Mr. Greenwood sympathetically alludes to their ideas, which I cannot qualify in courteous terms. Baconians "would, of course, explain the difficulty by saying that however sphinx-like were Jonson's utterances, he had clearly distinct in his own mind two different personages, *viz.* Shakspere the player, and Shakespeare the real author of the plays and poems, and that if in the perplexing passage quoted from the *Discoveries* he appears to confound one with the other, it is because the solemn seal of secrecy had been imposed on him." They *would* say, they *do* say all that. Ben is not to let out that Bacon is the author. So he tells us of Bacon that he often made himself ridiculous, and so forth, — but he *pretends* that he is speaking of Shakespeare.

All this wedge of wisdom, remember, is inserted between the search for "the efficient cause" of Ben's panegyric (1623), in the Folio, on his Beloved Mr. William Shakespeare, and the discovery of Ben's visits to Bacon in 1621–3.

Does Mr. Greenwood mean that Ben, in 1623 (or earlier), knew the secret of Bacon's authorship, and, stimulated by his hospitality, applauded his works in the Folio, while, as he must not disclose the secret, he throughout speaks of Bacon as Shakespeare, puns on that name in the line about seeming "to shake a lance," and salutes the Lord of Gorhambury as "Sweet Swan of Avon"? Mr. Greenwood cannot mean that; for he is not a Baconian. What *does* he mean?

Put together his pages 483, 489–491. On the former we find how "it would appear" that Jonson thought the issue of the Folio (1623) "a very special

occasion," and that perhaps if we could only "get to the back of his mind, we should find that there was some efficient cause operating to induce him to give the best possible sendoff to that celebrated venture." Then skip to p–491, and you find very special occasions: Bacon's birthday feast with its "mystery"; Ben as one of Bacon's "good pens," in 1623. "The best of these good pens, it seems, was Jonson." On what evidence does it "seem"? The opinion of Judge Webb.

Is this supposed collaboration with Bacon in 1623, "the efficient cause operating to induce" Ben "to give the best possible sendoff" to the Folio? How could this be the "efficient cause" if Bacon were not the author of the plays?

Mr. Greenwood, like the Genius at the birthday supper,

"Stands as if some mystery he did."

On a trifling point of honour, namely, as to whether Ben were a man likely to lie, tortuously, hypocritically, to be elaborately false about the authorship of the Shakespearean plays, it is hopelessly impossible to bring the Baconians and Mr. Greenwood (who "holds no brief for the Baconians") to my point of view. Mr. Greenwood rides off thus — what the Baconians do is unimportant.

"There are, as everybody knows, many falsehoods that are justifiable, some that it is actually a duty to tell." It may be so; I pray that I may never tell any of them (or any more of them).

Among justifiable lies I do not reckon that of Scott if ever he plumply denied that he wrote the *Waverley* novels. I do not judge Sir Walter. Heaven forbid! But if, in Mr. Greenwood's words, he, "we are told, thought it perfectly justifiable for a writer who wished to preserve his anonymity, to deny, when questioned, the authorship of a work, since the interrogator had no right to put such a question to him," I disagree with Sir Walter. Many other measures, in accordance with the conditions of each case, were open to him. Some are formulated by his own Bucklaw, in *The Bride of Lammermoor*, as regards questions about what occurred on his bridal night. Bucklaw would challenge the man, and cut the lady, who asked questions. But Scott's case, as cited, applies only to Bacon (or Mr. Greenwood's Unknown), if *he* were asked whether or not he were the author of the plays. No idiot, at that date, was likely to put the

question! But, if anyone did ask, Bacon must either evade, or deny, or tell the truth.

On the parallel of Scott, Bacon could thus deny, evade, or tell the truth. But the parallel of Scott is not applicable to any other person except to the author who wishes to preserve his anonymity, and is questioned. The parallel does not apply to Ben. *He* had not written the Shakespearean plays. Nobody was asking *him* if he had written them. If he knew that the author was Bacon, and knew it under pledge of secrecy, and was asked (*per impossibile*) "Who wrote these plays?" he had only to say, "Look at the title-page." But no mortal was asking Ben the question. But we are to suppose that, in the panegyric and in *Discoveries*, Ben chooses to assert, first, that Shakespeare was his Beloved, his Sweet Swan of Avon; and that he "loved him, on this side idolatry, as much as any." There is no evidence that he did love Shakespeare, except his own statement, when, according to the Baconians, he is really speaking of Bacon, and, according to Mr. Greenwood, of an unknown person, singularly like Bacon. Consequently, unless we can prove that Ben really loved the actor, he is telling a disgustingly hypocritical and wholly needless falsehood, both before and after the death of Bacon. To be silent about the authorship of a book, an authorship which is the secret of your friend and patron, is one thing and a blameless thing. All the friends, some twenty, to whom Scott confided the secret of his authorship were silent. But not one of them publicly averred that the author was their very dear friend, So-and-so, who was not Scott, and perhaps not their friend at all. That was Ben's line. Thus the parallel with Scott drawn by Mr. Greenwood, twice, is no parallel. It has no kind of analogy with Ben's alleged falsehoods, so elaborate, so incomprehensible except by Baconians, and, if he did not love the actor Shakspere dearly, so detestably hypocritical, and open to instant detection.

It is not easy to find a parallel to the conduct with which Ben is charged. But suppose that Scott lived unsuspected of writing his novels, which, let us say, he signed "James Hogg," and died without confessing his secret, and without taking his elaborate precautions for its preservation on record.

Next, imagine that Lockhart knew Scott's secret, under vow of silence, and was determined to keep it at any cost. He therefore, writing after the death of Hogg of Ettrick, and in Scott's lifetime, publishes verses declaring that Hogg was his "beloved" (an enormous fib), and that Hogg, "Sweet Swan of Ettrick," was the author of the *Waverley* novels.

To complete the parallels, Lockhart, after Scott's death, leaves a note in prose to the effect that, while he loved Hogg on this side idolatry (again, a monstrous fable), he must confess that Hogg, author of the *Waverley* novels, often fell into things that were ridiculous; and often needed to have a stopper put on him for all these remarks. Lockhart, while speaking of Hogg, is thinking of Scott — and he makes the remarks solely to conceal Scott's authorship of the novels — of which, on the hypothesis, nobody suspected Scott to be the author. Lockhart must then have been what the Baconian Mr. Theobald calls Mr. Churton Collins, "a measureless liar," — all for no reason.

Mr. Greenwood, starting as usual from the case, which is no parallel, of Scott's denying his own authorship, goes on, "for all we know, Jonson might have seen nothing in the least objectionable in the publication by some great personage of his dramatic works under a pseudonym" (under another man's name really), "even though that pseudonym led to a wrong conception as to the authorship; and that, if, being a friend of that great personage, and working in his service" (Ben worked, by the theory, in Bacon's), "he had solemnly engaged to preserve the secret inviolate, and not to reveal it even to posterity, then *doubtless* ('I thank thee, Jew' (meaning Sir Sidney Lee), 'for teaching me that word'!) he would have remained true to that solemn pledge."

To remain "true," Ben had only to hold his peace. But he lied up and down, and right and left, and even declared that Bacon was a friend of the players, and needed to be shut up, and made himself a laughing-stock in his plays, — styling Bacon "Shakespeare." All this, and much more of the same sort, we must steadfastly believe before we can be Baconians, for only by believing these doctrines can we get rid of Ben Jonson's testimony to the authorship of Will Shakspere, Gent.

XIII. THE PREOCCUPATIONS OF BACON

Let us now examine a miracle and mystery in which the Baconians find nothing strange; nothing that is not perfectly normal. Bacon was the author of the Shakespearean plays, they tell us. Let us look rapidly at his biography, after which we may ask, does not his poetic supremacy, and imaginative fertility, border on the miraculous, when we consider his occupations and his ruling passion?

Bacon, born in 1561, had a prodigious genius, was well aware of it, and had his own ideal as to the task which he was born to do. While still at Cambridge, and therefore before he was fifteen, he was utterly dissatisfied, as he himself informed Dr. Rawley, with the scientific doctrines of the Schools. In the study of nature they reasoned from certain accepted ideas, *a priori* principles, not from what he came to call "interrogation of Nature." There were, indeed, and had long been experimental philosophers, but the school doctors went not beyond Aristotle; and discovered nothing. As Mr. Spedding puts it, the boy Bacon asked himself, "If our study of nature be thus barren, our method of study must be wrong; might not a better method be found? . . . Upon the conviction 'This may be done,' followed at once the question, *How* may it be done? Upon that question answered followed the resolution to try and do it."

This was, in religious phrase, the Conversion of Bacon, "the event which had a greater influence than any other upon his character and future course. From that moment he had a vocation which employed and stimulated him . . . an object to live for as wide as humanity, as immortal as the human race; an idea to live in vast and lofty enough to fill the soul for ever with religious and heroic aspirations." The vocation, the idea, the object, were not poetical.

In addition to this ceaseless scientific preoccupation, Bacon was much concerned with the cause of reformed religion (then at stake in France, and supposed to be in danger at home), and with the good government of his native country. He could only aid that cause by the favour of Elizabeth and James; by

his services in Parliament, where, despite his desire for advancement, he conscientiously opposed the Queen. He was obliged to work at such tasks of various sorts, legal and polemical literature, as were set him by people in power. With these three great objects filling his heart, inspiring his ambition, and occupying his energies and time, we cannot easily believe, without direct external evidence, that he, or any mortal, could have leisure and detachment from his main objects (to which we may add his own advancement) sufficient to enable him to compose the works ascribed to Shakespeare.

Thus, at the age of twenty-two (1583), when, if ever, he might have penned sonnets to his mistress's eyebrow, he reports that he wrote "his first essay on the Instauration of Philosophy, which he called *Temporis Partus Maximus*, 'The Greatest Birth of Time,'" and "we need not doubt that between Law and Philosophy he found enough to do." For the Baconians take Bacon to have been a very great lawyer (of which I am no judge), and Law is a hard mistress, rapacious of a man's hours. In 1584 he entered Parliament, but we do not hear anything very important of his occupations before 1589, when he wrote a long pamphlet, "Touching the Controversies of the Church of England." He had then leisure enough; that he was not anonymously supplying the stage with plays I can neither prove nor disprove: but there is no proof that he wrote *Love's Labour's Lost*! By 1591–2, we learn much of him from his letter to Cecil, who never would give him a place wherein he could meditate his philosophy. He was apparently hard at scientific work. "I account my ordinary course of study and meditation to be more painful than most parts of action are." He adds, "The contemplative planet carries me away wholly," and by contemplation I conceive him to mean what he calls "vast contemplative ends." These he proceeds to describe: he does *not* mean the writing of *Venus and Adonis* (1593), nor of *Lucrece* (1594), nor of comedies! "I have taken all knowledge to be my province," and he recurs to his protest against the pseudo-science of his period. "If I could purge knowledge of two sorts of rovers whereof the one, with frivolous disputations, confutations, and verbosities; the other with blind experiments, and auricular traditions and impostures, hath committed so many

spoils, I hope I should bring in industrious observations, grounded conclusions, and profitable inventions and discoveries . . . This, whether it be curiosity, or vainglory, or nature, or (if one take it favourably) philanthropy, is so fixed in my mind that it cannot be removed." If Cecil cannot help him to a post, if he cannot serve the truth, he will reduce himself, like Anaxagoras, to voluntary poverty, " . . . and become some sorry bookmaker, or a true pioneer in that mine of truth . . . " Really, from first to last he was the prince of begging-letter writers, endlessly asking for place, pensions, reversions, money, and more money.

Though his years were thirty-one, Bacon was as young at heart as Shelley at eighteen, when he wrote thus to Cecil, "my Lord Treasurer Burghley." What did Cecil care for his youngish kinsman's philanthropy, and "vast speculative ends" (how *modern* it all is!), and the rest of it? But just because Bacon, at thirty-one, *is* so extremely "green," going to "take all knowledge for his province" (if some one will only subsidise him, and endow his research), I conceive that he was in earnest about his reformation of science. Surely no Baconian will deny it! Being so deeply in earnest, taking his "study and meditation" so hard, I cannot see him as the author of *Venus and Adonis*, and whatever plays of the period, — say, *Love's Labour's Lost*, *The Two Gentlemen of Verona*, *Henry VI*, Part I, — are attributed to him, about this time, by Baconians. Of course my view is merely personal or "subjective." The Baconians' view is also "subjective." I regard Bacon, in 1591, and later, as intellectually preoccupied by his vast speculative aims: — what he says that he desires to do, in science, is what he *did*, as far as he was able. His other desires, his personal advancement, money, a share in the conduct of affairs, he also hotly pursued, not much to his own or the public profit. There seems to be no room left, no inclination left, for competition in their own line with Marlowe, Greene, Nash, and half a dozen other professed playwrights: no room for plays done under the absurd pseudonym of an ignorant actor.

You see these things as the Baconians do, or as I do. Argument is unavailing. I take Bacon to have been sincere in his effusive letter to Cecil. Not so the Baconians; he concealed, they think, a vast *literary* aim. They must take

his alternative — to be "some sorry bookmaker, *or* a pioneer in that mine of truth," as meaning that he would either be the literary hack of a company of players, *or* the founder of a regenerating philosophy. But, at that date, playwrights could not well be called "bookmakers," for the owners of the plays did their best to keep them from appearing as printed books. If Bacon by "bookmaker" meant "playwright," he put a modest value on his poetical work!

Meanwhile (1591–2), Bacon attached himself to the young, beautiful, and famous Essex, on the way to be a Favourite, and gave him much excellent advice, as he always did, and, as always, his advice was not taken. It is not a novel suggestion, that Essex is the young man to whom Bacon is so passionately attached in the Sonnets traditionally attributed to Shakespeare. "I applied myself to him" (that is, to Essex), says Bacon, "in a manner which, I think, happeneth rarely among men." The poet of the Sonnets applies himself to the Beloved Youth, in a manner which (luckily) "happeneth rarely among men."

It is difficult to fit the Sonnets into Bacon's life. But, if you pursue the context of what Bacon says concerning Essex, you find that he does not speak *openly* of a tenderly passionate attachment to that young man; not more than *this*, "I did nothing but advise and ruminate with myself, to the best of my understanding, propositions and memorials of anything that might concern his Lordship's honour, fortune, or service." As Bacon did nothing but these things (1591–2), he had no great leisure for writing poetry and plays. Moreover, speaking as a poet, in the Sonnets, he might poetically exaggerate his intense amatory devotion to Essex into the symbolism of his passionate verse. *Was Essex then a married man*? If so, the Sonneteer's insistence on his marrying must be symbolical of — anything else you please.

We know that Bacon, at this period, "did nothing" but "ruminate" about Essex. The words are his own! (1604). No plays, no *Venus and Adonis*, nothing but enthusiastic service of Essex and the Sonnets. Mr. Spedding, indeed, thinks that, to adorn some pageant of Essex (November 17, 1592), Bacon kindly contributed such matter as "Mr. Bacon in Praise of Knowledge" (containing his

usual views about regenerating science), and "Mr. Bacon's Discourse in Praise of his Sovereign." Both are excellent, though, for a Court festival, not very gay.

He also, very early in 1593, wrote an answer to Father Parson's (?) famous indictment of Elizabeth's Government, in *Observations on a Libel*. What with ruminating on Essex, and this essay, he was not solely devoted to *Venus and Adonis* and to furbishing-up old plays, though, no doubt, he *may* have unpacked his bosom in the Sonnets, and indulged his luscious imaginations in *Venus and Adonis*. I would not limit the potentialities of his genius. But, certainly, this amazing man was busy in quite other matters than poetry; not to mention his severe "study and meditation" on science.

All these activities of Bacon, in the year of *Venus and Adonis*, do not exhaust his exercises. Bacon, living laborious days, plunged into the debate in the Commons on Supply and fell into Elizabeth's disgrace, and vainly competed with Coke for the Attorney-Generalship, and went on to write a pamphlet on the conspiracy of Lopez, and to try to gain the office of Solicitor-General, to manage Essex's affairs, to plead at the Bar, to do Crown work as a lawyer, to urge his suit for the Solicitorship; to trifle with the composition of "Formularies and Elegancies" (January 1595), to write his Essays, to try for the Mastership of the Rolls, to struggle with the affairs of the doomed Essex (1600–1), while always "labouring in secret" at that vast aim of the reorganisation of natural science, which ever preoccupied him, he says, and distracted his attention from his practice and from affairs of State. Of these State affairs the projected Union with Scotland was the most onerous. He was also writing *The Advancement of Learning* (1605). "I do confess," he wrote to Sir Thomas Bodley, "since I was of any understanding, my mind hath in effect been absent from that I have done." His mind was with his beloved Reformation of Learning: this came between him and his legal, his political labours, his pamphlet-writing, and his private schemes and suits. To this burden of Atlas the Baconians add the vamping-up of old plays for Shakespeare's company, and the inditing of new plays, poems, and the Sonnets. Even without this considerable addition to his tasks, Bacon is wonderful enough, but with it — he needs the sturdy faith of the

Rationalist to accept him and his plot — to write plays under the pseudonym of "William Shakespeare."

Talk of miracles as things which do not happen! The activities of Bacon from 1591 to 1605; the strain on that man's mind and heart, — especially his heart, when we remember that he had to prosecute his passionately adored Essex to the death; all this makes it seem, to me, improbable that, as Mrs. Pott and her school of Baconians hold, he lived to be at least a hundred and six, if not much older. No wonder that he turned to tragedy, *Lear*, *Macbeth*, *Othello*, and saw life *en noir*: man delighted him not, nor woman either.

The occupations, and, even more, the scientific preoccupation of Bacon, do not make his authorship of the plays a physical impossibility. But they make it an intellectual miracle. Perhaps I may be allowed to set off this marvel against that other portent, Will Shakspere's knowledge and frequent use of terms of Law. I do not pretend to understand how Will came to have them at the tip of his pen. Thus it may be argued that the Sonnets are by Bacon and no other man, because the Law is so familiar to the author, and his legal terms are always used with so nice an accuracy, that only Bacon can have been capable of these mysterious productions. (But why was Bacon so wofully inaccurate in points of scholarship and history?) By precisely the same argument Lord Penzance proves that Bacon (not Ben, as Mr. Greenwood holds) wrote for the players the Dedication of the Folio. "If it should be the case that Francis Bacon wrote the plays, he would, probably, afterwards have written the Dedication of the Folio, and the style of it" (stuffed with terms of law) "would be accounted for." Mr. Greenwood thinks that Jonson wrote the Dedication; so Ben, too, was fond of using legal terms in literature. "Legal terms abounded in all plays and poems of the period," says Sir Sidney Lee, and Mr. Greenwood pounces on the word "all." However he says, "We must admit that this use of legal jargon is frequently found in lay-writers, poets, and others of the Elizabethan period — in sonnets for example, where it seems to us intolerable." Examples are given from Barnabe Barnes. The lawyers all agree, however, that Shakespeare does the legal style "more natural," and more accurately than the rest. And yet I cannot

even argue that, if he did use legal terms at all, he would be sure to do it pretty well.

For on this point of Will's use of legal phraseology I frankly profess myself entirely at a loss. To use it in poetry was part of the worse side of taste at that period. The lawyers with one voice declare that Will's use of it is copious and correct, and that their "mystery" is difficult, their jargon hard to master; "there is nothing so dangerous," wrote Lord Campbell, "as for one not of the craft to tamper with our freemasonry." I have not tampered with it. Perhaps a man of genius who found it interesting might have learned the technical terms more readily than lawyers deem possible. But Will, so accurate in his legal terms, is so inaccurate on many other points; for example, in civil and natural history, and in classic lore. Mr. Greenwood proves him to be totally at sea as a naturalist. On the habits of bees, for example, "his natural history of the insect is as limited as it is inaccurate." Virgil, though not a Lord Avebury, was a great entomologist, compared with Will. About the cuckoo Will was recklessly misinformed. His Natural History was folklore, or was taken from that great mediæval storehouse of absurdities, the popular work of Pliny. "He went to contemporary error or antiquated fancy for his facts, not to nature," says a critic quoted by Mr. Greenwood. Was that worthy of Bacon?

All these charges against *le vieux Williams* (as Théophile Gautier calls our Will) I admit. But Will was no Bacon; Will had not "taken all knowledge for his province." Bacon, I hope, had not neglected Bees! Thus the problem, why is Will accurate in his legal terminology, and reckless of accuracy in quantity, in history, in classic matters, is not by me to be solved. I can only surmise that from curiosity, or for some other unknown reason, he had read law-books, or drawn information from Templars about the meaning of their jargon, and that, for once, he was technically accurate.

We have now passed in review the chief Baconian and Anti-Willian arguments against Will Shakespeare's authorship of the plays and poems. Their

chief argument for Bacon is *aut Diabolus*, *aut Franciscus*, which, freely interpreted, means, "If Bacon is not the author, who the devil is?"

We reply, that man is the author (in the main) to whom the works are attributed by every voice of his own generation which mentions them, namely, the only William Shakespeare that, from 1593 to the early years of the second decade of the following century, held a prominent place in the world of the drama. His authorship is explicitly vouched for by his fellow-players, Heminge and Condell, to whom he left bequests in his will; and by his sometime rival, later friend, and always critic, Ben Jonson; Heywood, player and playwright and pamphleteer, who had been one of Henslowe's "hands," and lived into the Great Rebellion, knew the stage and authors for the stage from within, and *his* "mellifluous Shakespeare" is "Will," as his Beaumont was "Frank," his Marlowe "Kit," his Fletcher, "Jack." The author of *Daiphantus* (1604), mentioning the popularity of *Hamlet*, styles it "one of friendly Shakespeare's tragedies." Shakespeare, to him, was our Will clearly, a man of known and friendly character. The other authors of allusions did not need to say *who* their "Shakespeare" was, any more than they needed to say *who* Marlowe or any other poet was. We have examined the possibly unprecedented argument which demands that they who mention Shakespeare as the poet must, if they would enlighten us, add explicitly that he is also the actor.

"But all may have been deceived" by the long conspiracy of the astute Bacon, or the Nameless One. To believe this possible, considering the eager and suspicious jealousy and volubility of rival playwrights, is to be credulous indeed. The Baconians, representing Will almost as incapable of the use of pen and ink as "the old hermit of Prague," destroy their own case. A Will who had to make his mark, like his father, could not pose as an author even to the call-boy of his company. Mr. Greenwood's bookless Will, with some crumbs of Latin, and some power of "bumbasting out a blank verse," is a rather less impossible pretender, indeed; but why and when did the speaker of patois, the bookless one, write blank verse, from 1592 onwards, and where are his blank verses? Where are the "works" of Poet-Ape? As to the man, even Will by tradition, whatever it

may be worth, he was "a handsome, well-shaped man; very good company, and of a very ready and pleasant, smooth wit." To his fellow-actors he was "so worthy a friend and fellow" (associate). To Jonson, "he was, indeed, honest, and of an open and free nature; had an excellent phantasy, brave notions, and gentle expressions, wherein he flowed so freely that sometimes it was necessary he should be stopped." If Jonson here refers, as I suppose he does, to his conversation, it had that extraordinary affluence of thoughts, each mating itself with as remarkable originality of richly figured expressions, which is so characteristic of the style of Shakespeare's plays. In this prodigality he was remote indeed from the style of the Greeks; "panting Time toils after him in vain," and even the reader, much more the listener, might say, *sufflaminandus est*; "he needs to have the brake put on."

Such, according to unimpeachable evidence, was Will. Only despair can venture the sad suggestion that, under the name of Shakespeare, Ben is here speaking of Bacon, as "falling into those things which could not escape laughter . . . which were ridiculous." But to this last poor shift and fantastic guess were the Anti-Willians and Baconians reduced.

Such was Shakespeare, according to a rival.

But it is "impossible" that a man should have known so much, especially of classical literature and courtly ways, and foreign manners and phrases, if he had no more, at most, than four or five years at a Latin school, and five or six years in that forcing-house of faculty, the London of the stage, in the flush of the triumph over the Armada.

"With innumerable sorts of English books and infinite fardles of printed pamphlets this country is pestered, all shops stuffed, and every study furnished," says a contemporary. If a doubter will look at the cheap and common books of that day (a play in quarto, and the Sonnets of Shakespeare, when new, were sold for fippence) in any great collection; he will not marvel that to a lover of books, poor as he might be, many were accessible. Such a man cannot be kept from books.

If the reader will look into "the translations and imitations of the classics which poured from the press . . . the poems and love-pamphlets and plays of the University wits" (when these chanced to be printed), "the tracts and dialogues in the prevailing taste," he will understand the literary soil in which the genius of Shakespeare blossomed as rapidly as the flowers in "Adonis' garden." The whole literature was, to an extent which we find tedious, saturated with classical myths, anecdotes, philosophic *dicta* — a world of knowledge of a kind then "in widest commonalty spread," but now so much forgotten that, to Baconians and the public, such lore seems recondite learning.

The gallants who haunted the stage, and such University wits as could get the money, or had talent (like Crichton) to "dispute their way through Europe," made the Italian tour, and, notoriously, were "Italianate." They would not be chary of reminiscences of Florence, Venice, and Rome. Actors visited Denmark and Germany. No man at home was far to seek for knowledge of Elsinore, the mysterious Venetian "tranect or common ferry," the gondolas, and the Rialto. There was no lack of soldiers fresh and voluble from the foreign wars. Only dullards, or the unthinking, can be surprised by the ease with which a quick-witted man, having some knowledge of Latin, can learn to read a novel in French, Italian, or Spanish. That Shakespeare was the very reverse of a dullard, of the clod of Baconian fancy, is proved by the fact that he was thought capable of his works. For courtly manners he had the literary convention and Lyly's Court Comedies, with what he saw when playing at the Court and in the houses of the great. As to untaught nobility of manners, there came to the Court of France in 1429, from a small pig-breeding village on the marches of Lorraine, one whose manners were deemed of exquisite grace, propriety, and charm, by all who saw and heard her: of her manners and swift wit and repartee, the official record of her trial bears concordant evidence. Other untaught gifts she possessed, and the historic record is unimpeached as regards that child of genius, Jeanne d'Arc.

"*Ne me dites jamais cette bête de mot*, *impossible*," said Napoleon: it is indeed a stupid word where genius is concerned.

If intellectual “miracles” were impossible to genius, even Bacon could not have been and done all that he was and did, and also the author of the Shakespearean plays and poems; even Ben could not have been the scholar that he was. For the rest, I need not return on my tracks and explain once more such shallow mysteries as the “Silence of Philip Henslowe,” and the lack of literary anecdotage about Shakespeare in a stupendously illiterate country town. Had Will, not Ben, visited Drummond of Hawthornden, we should have matter enough of the kind desired.

“We have the epics of Homer,” people say, “what matters it whether they be by a Man, or by a Syndicate that was in business through seven centuries? We have the plays of Shakespeare, what matters it whether he, or Bacon, or X. were, in the main, the author?”

It matters to us, if we hold such doubts to be fantastic pedantries, such guesses contrary to the nature of things; while we wish to give love and praise and gratitude where they are due; to that Achæan “Father of the rest”; and to “friendly Shakespeare.”

APPENDICES

APPENDIX I. "TROILUS AND CRESSIDA"

To myself *Troilus and Cressida* is, with *Henry VI*, Part I, the most mysterious among the Shakespearean plays. Here we find, if Will wrote it, or had any hand in it, the greatest poet of the modern world in touch with the heroes of the greatest poet of the ancient world; but the English author's eyes are dimmed by the mists and dust of post-Homeric perversions of the Tale of Troy. The work of perversion began, we know, in the eighth century before our era, when, by the author of the *Cypria*, these favourite heroes of Homer, Odysseus and Diomede, were represented as scoundrels, assassins, and cowards.

In the Prologue to the play (whosoever wrote it) we see that the writer is no scholar. He makes the Achæan fleet muster in "the port of *Athens*," of all places. Even Ovid gave the Homeric trysting-place, Aulis, in Bœotia. (This Prologue is not in the Folio of 1623.) Six gates hath the Englishman's Troy, and the Scæan is not one of them.

The loves of Troilus and Cressida, with Pandarus as go-between, are from the mediæval Troy books, and were wholly unknown to Homer, whose Pandarus is only notable for loosing a traitor's shaft at Menelaus, in time of truce, and for his death at the hand of Diomede. The play begins after the duel (Iliad, III) between Paris and Menelaus: in the play, not in Homer, Paris "retires hurt," as is at first reported. Hector has a special grudge against the Telamonian Aias. As in the Iliad there is a view of the Achæans, taken from the walls by Priam and Helen; so, in the play, Pandarus and Cressida review the Trojans re-entering the city. Paris turns out not to be hurt after all.

In Act i. Scene 3, the Achæans hold council, and regret the disaffection of Achilles. Here comes Ulysses' great speech on discipline, in armies, and in states, the gradations of rank and duty; commonly thought to be a leaf in Shakespeare's crown of bays. The speeches of Agamemnon and Nestor are dignified; indeed the poet treats Agamemnon much more kindly than Homer is wont to do. But the poet represents Achilles as laughing in his quarters at Patroclus's imitation of the cough and other infirmities of old Nestor, to which

Homer, naturally, never alludes. Throughout, the English poet regards Achilles with the eyes of his most infamous late Greek and ignorant mediæval detractors. The Homeric sequence of events is so far preserved that, on the day of the duel between Paris and Menelaus, comes (through Æneas) the challenge by Hector to fight any Greek in "gentle and joyous passage of arms" (Iliad, VII). As in the Iliad, the Greeks decide by lot who is to oppose Hector; but by the contrivance of Odysseus (not by chance, as in Homer) the lot falls on Aias. In the Iliad Aias is as strong and sympathetic as Porthos in *Les Trois Mousquetaires*. The play makes him as great an eater of beef, and as stupid as Sir Andrew Aguecheek. Achilles, save in a passage quite out of accord with the rest of the piece, is nearly as dull as Aias, is discourteous, and is cowardly! No poet and no scholar who knew Homer's heroes in Homer's Greek, could thus degrade them; and the whole of the revilings of Thersites are loathsome in their profusion of filthy thoughts. It does not follow that Will did not write the part of Thersites. Some of the most beautiful and Shakespearean pieces of verse adorn the play; one would say that no man but Will could have written them. Troilus and Cressida, at first, appear "to dally with the innocence of love"; and nothing can be nobler and more dramatic than the lines in which Cressida, compelled to go to her father, Calchas, in the Greek camp, in exchange for Antenor, professes her loyalty in love. But the Homeric and the alien later elements, — the story of false love, — cannot be successfully combined. The poet, whoever he was, appears to weary and to break down. He ends, indeed, as the Iliad ends, with the death of Hector, but Hector, in the play, is murdered, while resting unarmed, without shield and helmet, after stripping a suit of sumptuous mail from a nameless runaway. In the play he has slain Patroclus, but has not stripped him of the armour of Achilles, which, in Homer, he is wearing. Achilles then meets Hector, but far from rushing to avenge on him Patroclus, he retires like a coward, musters his men, and makes them surround and slay the defenceless Hector.

Cressida, who is sent to her father Calchas, in the Greek camp, in a day becomes "the sluttish spoil of opportunity," and of Diomede, and the comedy

praised by the preface-writer of a quarto of 1609, is a squalid tragedy reeking of Thersites and Pandarus, of a light o' love, and the base victory of cruel cowardice over knightly Hector. Yet there seemed to be muffled notes from the music, and broken lights from the splendour of Homer. When Achilles eyes Hector all over, during a truce, and insultingly says that he is thinking in what part of his body he shall drive the spear, we are reminded of Iliad, XXII, 320–326, where Achilles searches his own armour, worn by Patroclus, stripped by Hector from him, and worn by Hector, for a chink in the mail. Yet, after all, these points are taken, not from the Iliad, but from Caxton's popular Troy Book.

Once more, when Hector is dead, and Achilles bids his men to "cry amain, Achilles hath the mighty Hector slain,"

we think of Iliad, XXII, 390–393, where Achilles commands the Myrmidons to go singing the pæan "Glory have we won, we have slain great Hector!"

The sumptuous armour stripped by Hector from a nameless man, recalls his winning of the arms of Achilles from Patroclus. But, in fact, this passage is also borrowed, with the murder of Hector, from Caxton, except as regards the pæan.

It may be worth noting that Chapman's first instalment of his translation of the Iliad, containing Books I, II, and VII–XI, appeared in 1598, and thence the author could adapt the passages from Iliad, Book VII. In or about 1598–9 occurred, in *Histriomastix*, by Marston and others, a burlesque speech in which Troilus, addressing Cressida, speaks of "thy knight," who "*Shakes* his furious *Speare*," while in April 1599, Henslowe's account-book contains entries of money paid to Dekker and Chettle for a play on Troilus and Cressida, for the Earl of Nottingham's Company. Of this play no more is known, nor can we be sure that Chapman's seven Books of the Iliad (I, II, VII–XI) of 1598 attracted the attention of playwrights, from Shakespeare to Chettle and Dekker, to Trojan affairs. The coincidences at least are curious. If "*Shakes* his furious *Speare*" in *Histriomastix* refers to Shakespeare in connection with Cressida, while, in 1599, Dekker and Chettle were doing a *Troilus and Cressida* for a company not Shakespeare's, then there were *two Troilus and Cressida* in the field. A licence to print a *Troilus and Cressida* was obtained in 1602–3, but the quarto of our

play, the Shakespearean play, is of 1609, "as it is acted by my Lord Chamberlain's men," that is, by Shakespeare's Company. Now Dekker and Chettle wrote, apparently, for Lord Nottingham's Company. One quarto of 1609 declares, in a Preface, that the play has "never been staled with the stage"; another edition of the same year, from the same publishers, has not the Preface, but declares that the piece "was acted by the King's Majesty's servants *at the Globe*." The author of the Preface (Ben Jonson, Mr. Greenwood thinks,) speaks only of a single author, who has written other admirable comedies. "When he is gone, and his comedies out of sale, you will scramble for them, and set up a new English Inquisition." Why? The whole affair is a puzzle. But if the author of the Preface is right about the single author of *Troilus and Cressida*, and if Shakespeare is alluded to in connection with Cressida, in *Histriomastix* (1599), then it appears to me that Shakespeare, in 1598–9, after Chapman's portion of the Iliad appeared, was author of one *Troilus and Cressida*, extant in 1602–3 (when its publication was barred till the publisher "got authority"), while Chettle and Dekker, in April 1599, were busy with another *Troilus and Cressida*, as why should they not be? In an age so lax about copyright, if their play was of their own original making, are we to suppose that there was copyright in the names of the leading persons of the piece, Troilus and Cressida?

Perhaps not: but meanwhile Mr. Greenwood cites Judge Stotsenburg's opinion that Henslowe's entries of April 1599 "refute the Shakespearean claim to the authorship of *Troilus and Cressida*," which exhibits "the collaboration of

two men," as "leading commentators" hold that it does. But the learned Judge mentions as a conceivable alternative that "there were two plays on the subject with the same name," and, really, it looks as if there were! The Judge does not agree "with Webb and other gifted writers that Bacon wrote this play." So far the Court is quite with him. He goes on however, "It was, in my opinion, based on the foregoing facts, originally the production of Dekker and Chettle, added to and philosophically dressed by Francis Bacon." But, according to Mr. Greenwood, "it is admitted not only that the different writing of two authors is apparent in the Folio play, but also that 'Shakespeare' must have had at least some share in a play of *Troilus and Cressida* as early as the very year 1599, in the spring of which Dekker and Chettle are found engaged in writing their play of that name," on the evidence of *Histriomastix*. How that evidence proves that "a play of *Troilus and Cressida* had been *published* as by 'Shakespeare' about 1599," I know not. Perhaps "published" means "acted"? "And it is not unreasonable to suppose that this play" ("published as by Shakespeare") "was the one to which Henslowe alludes" — as being written in April 1599, by Dekker and Chettle.

If so, the play must show the hands of three, not two, men, Dekker, Chettle, and "Shakespeare," the Great Unknown, or Bacon. He collaborates with Dekker and Chettle, in a play for Lord Nottingham's men (according to Sir Sidney Lee), but it is, later at least, played by Shakespeare's company; and perhaps Bacon gets none of the £4 paid to Dekker and Chettle. Henslowe does not record his sale of the Dekker and Chettle play to Shakespeare's or to any company or purchaser. Without an entry of the careful Henslowe recording his receipts for the sale of the Dekker and Chettle play to any purchaser, it is not easy to see how Shakespeare's company procured the manuscript, and thus enabled him to refashion it. Perhaps no reader will fail to recognise his hand in the beautiful blank verse of many passages. I am not familiar enough with the works of Dekker and Chettle to assign to them the less desirable passages. Thersites is beastly: a Yahoo of Swift's might poison with such phrases as his the name and nature of love, loyalty, and military courage. But whatsoever Shakespeare did,

he did thoroughly, and if he were weary, if man delighted him not, nor woman either, he may have written the whole piece, in which love perishes for the whim of "a daughter of the game," and the knightly Hector is butchered to sate the vanity of his cowardly Achilles. If Shakespeare read the books translated by Chapman, he must have read them in the same spirit as Keats, and was likely to find that the poetry of the Achæan could not be combined with the Ionian, Athenian, and Roman perversions, as he knew them in the mediæval books of Troy, in the English of Lydgate and Caxton. The chivalrous example of Chaucer he did not follow. Probably Will looked on the play as one of his failures. The Editor, if we can speak of an Editor, of the Folio clearly thrust the play in late, so confusedly that it is not paged, and is not mentioned in the table of the contents.

"The Grand Possessors" of the play referred to in the Preface to one of the two quartos of 1609 we may suppose to be Shakespeare's Company. In this case the owners would not permit the publication of the play if they could prevent it. The title provokes Mr. Greenwood to say, "Why these worthies should be so styled is not apparent; indeed the supposition seems not a little ridiculous." Of course, if the players were the possessors, "grand" is merely a jeer, by a person advertising a successful piracy. And in regard to Tieck's conjecture that James I is alluded to as "the grand possessor, for whom the play was expressly written," the autocratic James was very capable of protecting himself against larcenous publishers.

APPENDIX II. CHETTLE'S SUPPOSED ALLUSION TO WILL SHAKSPERE

In discussing contemporary allusions to William Shakspere or Shakespeare (or however you spell the name), I have not relied on Chettle's remarks (in *Kind-Hart's Dreame*, 1592) concerning Greene's *Groatsworth of Wit*. Chettle speaks of it, saying, "in which a letter, written to divers playmakers, is offensively by one or two of them taken." It appears that by "one or two" Chettle means *two*. "With *neither* of them that take offence was I acquainted" (at the time when he edited the *Groatsworth*), "and with one of them I care not if I never be." We do not know who "the Gentlemen his Quondam acquaintance," addressed by Greene, were. They are usually supposed to have been Marlowe, Peele, and Lodge, or Nash. We do not know which of the two who take offence is the man with whom Chettle did not care to be acquainted. Of "the other," according to Chettle, "myself have seen his demeanour no less civil than he is excellent in the quality he professes" (that is, "in his profession," as we say), "besides divers of worship have reported his uprightness of dealing, which argues his honesty; and his facetious grace in writing that approves his art."

Speaking from his own observation, Chettle avers that the person of whom he speaks is civil in his demeanour, and (*apparently*) that he is "excellent in the quality he professes" — in his profession. Speaking on the evidence of "divers of worship," the same man is said to possess "facetious grace in writing." Had his writings been then published, Chettle, a bookish man, would have read them and formed his own opinion. Works of Lodge, Peele, and Marlowe had been published. Writing is *not* "the quality he professes," is not the "profession" of the man to whom Chettle refers. On the other hand, the profession of Greene's "Quondam acquaintance" *was* writing, "they spend their wits in making Plays." Thus the man who wrote, but whose profession was not that of writing, does not, so far, appear to have been one of those addressed by Greene. It seems undeniable that Greene addresses gentlemen who are "playmakers," who "spend

their wits in making Plays," and who are *not* actors; for Greene's purpose is to warn them against the rich, ungrateful actors. If Greene's friends, at the moment when he wrote, were, or if any one of them then was, by profession an actor, Greene's warning to him against actors, directed to an actor, is not, to me, intelligible. But Mr. Greenwood writes, "As I have shown, George Peele was one of the playwrights addressed by Greene, and Peele was a successful player as well as playwright, and might quite truly have been alluded to both as having 'facetious grace in writing,' and being 'excellent in the quality he professed,' that is, as a professional actor."

I confess that I did not know that George Peele, M.A., of Oxford, had ever been a player, and a successful player. But one may ask, — in 1592 did George Peele "profess the quality" of an actor; was he then a professional actor, and only an occasional playwright? If so, I am not apt to believe that Greene seriously advised him not to put faith in the members of his own profession. From them, as a successful member of their profession (a profession which, as Greene complains, "exploited" dramatic authors), Peele stood in no danger. Thus I do not see how Chettle's professional actor, reported to have facetious grace in writing, can be identified with Peele. The identification seems to me impossible. Peele and Marlowe, in 1592, were literary gentlemen; Lodge, in 1592, was filibustering, though a literary man; he had not yet become a physician. In 1592, none of the three had any profession but that of literature, so far as I am aware. The man who had a special profession, and also wrote, was not one of these three; nor was he Tom Nash, a mere literary gentleman, pamphleteer and playwright.

I do not know the name of any one of the three to whom Greene addressed the *Groatsworth*, though the atheistic writer of tragedies seems meant, and disgracefully meant, for Marlowe. I only know that Chettle is expressing his regrets for Greene's language to some one whom he applauded as to his exercise of his profession; and who, according to "divers of worship," had also "facetious grace in writing." "Myself have seen him no less civil than he is excellent in the quality he professes"; whether or not this means that Chettle has *seen* his

excellence in his profession, I cannot tell for certain; but Chettle's remark is, at least, contrasted with what he gives merely from report— "the facetious grace in writing" of the man in question. *His* writing is not part of his profession, so he is not, in 1592 (I conceive), Lodge, Peele, Marlowe, or Nash.

Who, then, is this mysterious personage? Malone, Dyce, Steevens, Collier, Halliwell-Phillipps, Knight, Sir Sidney Lee, Messrs. Gosse and Garnett, and Mr. J. C. Collins say that he is Will Shakspere. But Mr. Fleay and Mr. Castle, whose "mind" is "legal," have pointed out that this weird being cannot be Shake-scene (or Shakspere, if Greene meant Shakspere), attacked by Greene. For Chettle says that in the *Groatsworth of Wit* "a letter, written to divers playmakers, is offensively by one or two of them taken." The mysterious one is, therefore, one of the playwrights addressed by Greene. Consequently all the followers of Malone, who wrote before Messrs. Fleay and Castle, are mistaken; and what Mr. Greenwood has to say about Sir Sidney Lee, J. C. Collins, and Dr. Garnett, and Mr. Gosse, in the way of moral reprobation, may be read by the curious in his pages.

Meanwhile, if we take Chettle to have been a strict grammarian, by his words — "a letter, written to divers playmakers, is offensively by one or two of them taken," Will is excluded; the letter was most assuredly not written to *him*. But I, whose mind is not legal, am not certain that Chettle does not mean that the letter, written to divers playmakers, was by one or two makers of plays offensively taken.

This opinion seems the less improbable, as the person to whom Chettle is most apologetic excels in a quality or profession, which is contrasted with, and is not identical with, "his facetious grace in writing" — a *parergon*, or " bye-work," in his case. Whoever this person was, he certainly was not Marlowe, Peele, Lodge, or Nash. We must look for some other person who had a profession, and also was reported to have facetious grace in writing.

If Chettle is to be held tight to grammar, Greene referred to some one unknown, some one who wrote for the stage, but had another profession. If Chettle is not to be thus tautly construed, I confess that to myself he seems to

have had Shakspere, even Will, in his mind. For Will in 1592 had “a quality which he professed,” that of an actor; and also (I conceive) was reported to have “ facetious grace in writing.” But other gentlemen may have combined these attributes; wherefore I lay no stress on the statements of Chettle, as if they referred to our Will Shakspere.

Forty Years of Bacon-Shakespeare Folly by John Fiske

From 'A Century of Science and Other Essays'

Some time ago, while I happened to be looking over a wheelbarrow-load of rubbish written to prove that such plays as "King Lear" and "The Merry Wives of Windsor" emanated from one of the least poetical and least humorous minds of modern times, I was reminded of a story which I heard when a boy. I forget whether it was some whimsical man of letters like Charles Lamb, or some such professional wag as Theodore Hook, who took it into his head one day to stand still on a London street, with face turned upward, gazing into the sky. Thereupon the next person who came that way forthwith stopped and did likewise, and then the next, and the next, until the road was blocked by a dense crowd of men and women, all standing as if rooted in the ground, and with solemn sky-ward stare. The enchantment was at last broken when some one asked what they were looking at, and nobody could tell. It was simply an instance of a certain remnant of primitive gregariousness of action on the part of human beings, which exhibits itself from time to time in sundry queer fashions and fads.

So when Miss Delia Bacon, in the year which saw the beginning of "The Atlantic Monthly," published a book purporting to unfold the "philosophy" of Shakespeare's dramas, it was not long before other persons began staring intently into the silliest mare's nest ever devised by human dulness; and the fruits of so much staring have appeared in divers eccentric volumes, of which more specific mention will presently be made. Neither in number nor in quality are they such as to indicate that the Bacon-Shakespeare folly has yet become fashionable, and we shall presently observe in it marked suicidal tendencies which are likely to prevent its ever becoming so; but there are enough of such volumes to illustrate the point of my anecdote.

Another fad, once really fashionable, and in defence of which some plausible arguments could be urged, was the Wolfian theory of the Homeric poems, which dazzled so many of our grandparents. It is worth our while to mention it here by way of prelude. The theory that the Iliad and Odyssey are mere aggregations of popular ballads, collected and arranged in the time of Pisistratus, was perhaps originally suggested by the philosopher Vico, but first attracted general attention in 1795, when set forth by Friedrich August Wolf, one of the most learned and brilliant of modern scholars. Thus eminently respectable in its parentage and quite reasonable on the surface, this ballad theory came to be widely fashionable; forty years ago it was accepted by many able scholars, though usually with large modifications.

The Wolfians urged that we know absolutely nothing about the man Homer, not even when or where he lived. His existence is merely matter of tradition, or of inference from the existence of the poems. But as the poems know nothing of Dorians in Peloponnesus, their date can hardly be so late as 1100 b. c. What happened, then, when "an edition of Homer" was made at Athens, about 530 b. c., by Pisistratus, or under his orders? Did the editor simply edit two great poems already six centuries old, or did he make up two poems by piecing together a miscellaneous lot of ancient ballads? Wolf maintained the latter alternative, chiefly because of the alleged impossibility of composing and preserving such long poems in the alleged absence of the art of writing. Having thus made a plausible start, the Wolfians proceeded to pick the poems to pieces, and to prove by "internal evidence" that there was nothing like "unity of design" in them, etc.; and so it went on, till poor old Homer was relegated to the world of myth. As a schoolboy I used to hear the belief in the existence of such a poet derided as "uncritical" and "unscholarly."

In spite of these terrifying epithets, the ballad theory never made any impression upon me; for it seemed to ignore the most conspicuous and vital fact about the poems, namely, the *style*, the noble, rapid, simple, vivid, supremely poetical style, — a style as individual and unapproachable as that of Dante or Keats. For an excellent characterization of it, read Matthew Arnold's charming

essays “On Translating Homer.” The style is the man, and to suppose that this Homeric style ever came from a democratic multitude of minds, or from anything save one of those supremely endowed individual natures such as get born once or twice in a millennium, is simply to suppose a psychological impossibility. I remember once talking about this with George Eliot, who had lately been reading Frederick Paley’s ingenious restatement of the ballad theory, and was captivated by its ingenuity. I told her I did not wonder that old dry-as-dust philologists should hold such views, but I was indeed surprised to find such a literary artist as herself ignoring the impassable gulf between Homer’s language and that which any ballad theory necessarily implies. She had no answer for this except to say that she should have supposed an evolutionist like me would prefer to regard the Homeric poems as gradually evolved rather than suddenly created! A retort so clever and amiable most surely entitled her to the woman’s privilege of the last word.

The Wolfian theory may now be regarded as a thing of the past; it has had its day and been flung aside. If Wolf himself were living, he would be the first to laugh at it. Its original prop has been knocked away, since it has become pretty clear that the art of writing was practised about the shores of the Ægean Sea long before 1100 b. c. Even Wolf would now admit that it might have been a real letter that Bellerophon carried to the father of Anteia. All attempts to show a lack of unity in the design of the Iliad and the Odyssey have failed irretrievably, and the discussion has served only to make more and more unmistakable the work of the mighty master. The ballad theory is dead and buried, and he who would read its obituary may find keen pleasure, as well as many a wholesome lesson in sound criticism, in the sensible and brilliant book by Andrew Lang on “Homer and the Epic.”

The Bacon-Shakespeare folly has never been set forth by scholars of commanding authority, like Wolf and Lachmann, or Niese and Wilamowitz Moellendorff. Among Delia Bacon’s followers not one can by any permissible laxity of speech be termed a scholar, and their theory has found acceptance with very few persons. Nevertheless, it illustrates as well as the Wolfian theory the

way in which such notions grow. It starts from a false premise, hazily conceived, and it subsists upon arguments in which trivial facts are assigned higher value than facts of vital importance. Mr. Lang's remark upon certain learned Homeric commentators, "that they pore over the hyssop on the wall, but are blind to the cedar of Lebanon," applies with tenfold force to the Bacon-Shakespeare sciolists. In them we always miss the just sense of proportion which is one of the abiding marks of sanity. The unfortunate lady who first brought their theory into public notoriety in 1857 was then sinking under the cerebral disease of which she died two years later, and her imitators have been chiefly weak minds of the sort that thrive upon paradox, closely akin to the circle-squarers and inventors of perpetual motion. Underlying all the absurdities, however, there is something that deserves attention. Like many other morbid phenomena, the Bacon-Shakespeare folly has its natural history which is instructive. The vagaries of Delia Bacon and her followers originated in a group of conditions which admit of being specified and described, and which the historian of nineteenth-century literature will need to notice. In order to understand the natural history of the affair, it is necessary to examine the Delia Bacon theory at greater length than it would otherwise deserve. Let us see how it is constructed.

It starts with a syllogism, of which the major premise is that the dramas ascribed to Shakespeare during his lifetime, and ever since believed to be his, abound in evidences of extraordinary book-learning. The minor premise is that William Shakespeare of Stratford-on-Avon could not have acquired or possessed so much book-learning. The conclusion is that he could not have written those plays.

The question then arises, Which of Shakespeare's contemporaries had enough book-lore to have written them? No doubt Francis Bacon had enough. The conclusion does not follow, however, that he wrote the plays; for there were other contemporaries with learning enough and to spare, as for example George Chapman and Ben Jonson. These two men, to judge from their acknowledged works, were great poets, whereas in Bacon's fifteen volumes there is not a paragraph which betrays poetical genius. Why not, then, ascribe the Shakespeare

dramas to Chapman or Jonson? Here the Baconizers endeavour to support their assumption by calling attention to similarities in thought and phrase between Francis Bacon and the writer of the dramas. Up to this point their argument consists of deductions from assumed premises; here they adduce inductive evidence, such as it is. We shall see specimens of it by and by. At present we are concerned with the initial syllogism.

And first, as to the major premise, it must be met with a flat denial. The Shakespeare plays do not abound with evidences of scholarship or learning of the sort that is gathered from profound and accurate study of books. It is precisely in this respect that they are conspicuously different from many of the plays contemporary with them, and from other masterpieces of English literature. Such plays as Jonson's "Sejanus" and "Catiline" are the work of a scholar deeply indoctrinated with the views and mental habits of classic antiquity; he has soaked himself in the style of Lucan and Seneca, until their mental peculiarities have become like a second nature to him, and are unconsciously betrayed alike in the general handling of his story and in little turns of expression. Or take Milton's "Lycidas:" no one but a man saturated in every fibre with Theocritus and Virgil could have written such a poem. An extremely foreign and artificial literary form has been so completely mastered and assimilated by Milton that he uses it with as much ease as Theocritus himself, and has produced a work that even the master of idyls had scarcely equalled. After the terrific invective against the clergy and the beautiful invocation to the flowers, followed by the triumphant hallelujah of Christian faith, observe the sudden reversion to pagan sentiment where Lycidas is addressed as the genius of the shore. Only profound scholarship could have written this wonderful poem, — could have brought forth the Christian thought as if spontaneously through the medium of the pagan form. Now there is nothing of this sort in Shakespeare. He uses classical materials, or anything else under the sun that suits his purpose. He takes a chronicle from Holinshed, a biography from North's translation of Plutarch, a legend from Saxo Grammaticus through Belleforest's French version, a novel of Boccaccio, a miracle play, — whatever

strikes his fancy; he chops up his materials and weaves them into a story without much regard to classical models; defying rules of order and unity, and not always heeding probability, but never forgetful of his abiding purpose, to create live men and women. These people may have Greek or Latin names, and their scene of action may be Rome or Mitylene, decorated with scraps of classical knowledge such as a bright man might pick up in miscellaneous reading; but all this is the superficial setting, the mere frame to the picture. The living canvas is human nature as Shakespeare saw it in London and depicted with supreme poetic faculty. Among the new books within his reach was Chapman's magnificent translation of the Iliad, which at a later day inspired Keats to such a noble outburst of encomium; and in "Troilus and Cressida" we have the Greek and Trojan heroes set before us with an incisive reality not surpassed by Homer himself. This play shows how keenly Shakespeare appreciated Homer, how delicately and exquisitely he could supplement the picture; but there is nothing in its five acts that shows him clothed in the garment of ancient thought as Milton wore it. Shakespeare's freedom from such lore is a great advantage to him; in "Troilus and Cressida" there is a freedom of treatment hardly possible to a professional scholar. It is because of this freedom that Shakespeare reaches a far wider public of readers and listeners than Milton or Dante, whose vast learning makes them in many places "caviare to the general." Book-lore is a great source of power, but one may easily be hampered by it. What we forever love in Homer is the freshness that comes with lack of it, and in this sort of freshness Shakespeare agrees with Homer far more than with the learned poets.

It is not for a moment to be denied that Shakespeare's plays exhibit a remarkable wealth of varied knowledge. The writer was one of the keenest observers that ever lived. In the woodland or on the farm, in the printing shop or the alehouse, or up and down the street, not the smallest detail escaped him. Microscopic accuracy, curious interest in all things, unlimited power of assimilating knowledge, are everywhere shown in the plays. These are some of the marks of what we call *genius*, — something that we are far from comprehending, but which experience has shown that books and universities

cannot impart. All the colleges on earth could not by combined effort make the kind of man we call a genius, but such a man may at any moment be born into the world, and it is as likely to be in a peasant's cottage as anywhere.

There is nothing in which men differ more widely than in the capacity for imbibing and assimilating knowledge. The capacity is often exercised unconsciously. When my eldest son, at the age of six, was taught to read in the course of a few weeks of daily instruction, it was suddenly discovered that his four-year-old brother also could read. Nobody could tell how it happened. Of course the younger boy must have taken keen notice of what the elder one was doing, but the process went on without attracting attention until the result appeared.

This capacity for unconscious learning is not at all uncommon. It is possessed to some extent by everybody; but a very high degree of it is one of the marks of genius. I remember one evening, many years ago, hearing Herbert Spencer in a friendly discussion regarding certain functions of the cerebellum. Abstruse points of comparative anatomy and questions of pathology were involved. Spencer's three antagonists were not violently opposed to him, but were in various degrees unready to adopt his views. The three were: Huxley, one of the greatest of comparative anatomists; Hughlings Jackson, a very eminent authority on the pathology of the nervous system; and George Henry Lewes, who, although more of an amateur in such matters, had nevertheless devoted years of study to neural physiology, and was thoroughly familiar with the history of the subject. Spencer more than held his ground against the others. He met fact with fact, brought up points in anatomy the significance of which Huxley confessed that he had overlooked, and had more experiments and clinical cases at his tongue's end than Jackson could muster. It was quite evident that he knew all they knew on the subject, and more besides. Yet Spencer had never been through a course of "regular training" in the studies concerned; nor had he ever studied at a university, or even at a high school. Where did he learn the wonderful mass of facts which he poured forth that evening? Whence came his tremendous grasp upon the principles involved? Probably he could not have told you. A few days

afterward I happened to be talking with Spencer about history, a subject of which he modestly said he knew but little. I told him I had often been struck with the aptness of the historic illustrations cited in many chapters of his "Social Statics," written when he was twenty-nine years old. The references were not only always accurate, but they showed an intelligence and soundness of judgment unattainable, one would think, save by close familiarity with history. Spencer assured me that he had never read extensively in history. Whence, then, this wealth of knowledge, — not smattering, not sciolism, but solid, well-digested knowledge? Really, he did not know, except that when his interest was aroused in any subject he was keenly alive to all facts bearing upon it, and seemed to find them whichever way he turned. When I mentioned this to Lewes, while recalling the discussion on the cerebellum, he exclaimed: "Oh, you can't account for it! It's his genius. Spencer has greater instinctive power of observation and assimilation than any man since Shakespeare, and he is like Shakespeare for hitting the bull's-eye every time he fires. As for Darwin and Huxley, we can follow their intellectual processes, but Spencer is above and beyond all; he is inspired!"

Those were Lewes's exact words, and they made a deep impression upon me. The comparison with Shakespeare struck me as a happy one, and I can understand both Spencer and Shakespeare the better for it. Concerning Spencer one circumstance may be observed. Since his early manhood he has lived in London, and has had for his daily associates men of vast attainments in every department of science. He has thus had rare opportunities for absorbing an immense fund of knowledge unconsciously.

It is evident that the author of Shakespeare's plays possessed an extraordinary "instinctive power of observation and assimilation." There was nothing strange in such a genius growing up in a small Warwickshire town. The difficulty is one which the Delia-Baconians have created for themselves. As it is their chief stock in trade, they magnify it in every way they can think of. Shakespeare's parents, they say, were illiterate, and he did not know how to spell his own name. It appears as Shagspere, Shaxpur, Shaxberd, Chacsper, and so on through some

thirty forms, several of which William Shakespeare himself used indifferently. The implication is that such a man must have been shockingly ignorant. The real ignorance, however, is on the part of those who use such an argument. Apparently, they do not know that in Shakespeare's time such laxity in spelling was common in all ranks of society and in all grades of culture. The name of Elizabeth's great Lord Treasurer, Cecil, and his title, Burghley, were both spelled in half a dozen ways. The name of Raleigh occurs in more than forty different forms, and Sir Walter, one of the most accomplished men of his time, wrote it Rauley, Rawleyghe, Ralegh, and in yet other ways. The talk of the Baconizers on this point is simply ludicrous.

Equally silly is their talk about the dirty streets of Stratford. They seem to have just discovered that Elizabeth's England was a badly drained country, with heaps of garbage in the streets. Shakespeare's father, they tell us, was a butcher, and evidently from a butcher's son, living in an ill-swept town, and careless about the spelling of his name, not much in the way of intellectual achievement was to be expected! In point of fact, Shakespeare's parents belonged to the middle class. His father owned several houses in Stratford and two or three farms in the neighbourhood. As a farmer in those days, he would naturally have cattle slaughtered on his premises and would sell wool off the backs of his own flocks, whence the later tradition of his having been butcher and wool dealer. That his social position was good is shown by the facts that he was chief alderman and high bailiff of Stratford, and justice of the peace, and was styled "Master John Shakespeare," or (as we should say) "Mr.;" whereas, had he been one of the common folk, his style had been "Goodman Shakespeare." A visit to his home in Henley Street, and to Anne Hathaway's cottage at Shottery, shows that the two families were in eminently respectable circumstances. The son of the high bailiff would see the best people in the neighbourhood. There was in the town a remarkably good free grammar school, where he might have learned the "small Latin and less Greek" which his friend Ben Jonson assures us he possessed. This expression, by the way, is usually misunderstood, because people do not pause to consider it. Coming from Ben Jonson, I should say that

“small Latin and less Greek” might fairly describe the amount of those languages ordinarily possessed by a member of the graduating class at Harvard in good standing. It can hardly imply less than the ability to read Terence at sight, and perhaps Euripides less fluently. The author of the plays, with his unerring accuracy of observation, knows Latin enough at least to use the Latin part of English most skilfully; at the same time, when he has occasion to use Greek authors, such as Homer or Plutarch, he usually prefers an English translation. At all events, Jonson’s remark informs us that the man whom he addresses as “sweet swan of Avon” knew *some* Latin and *some* Greek, — a conclusion which is so distasteful to one of our Baconizers, Mr. Edwin Reed, that he will not admit it. Rather than do so, he has the assurance to ask us to believe that by the epithet “sweet swan of Avon” Jonson really meant Francis Bacon! Dear me, Mr. Reed, do you really mean it? And how about the editor of Beaumont and Fletcher in 1647, when, in his dedication to Shakespeare’s friend the Earl of Pembroke, he speaks of “Sweet Swan of Avon Shakespear”? Was he too a participator in the little scheme for fooling posterity? Or was he one of those who were fooled?

Whether Shakespeare had other chances for book-lore than those which the grammar school afforded, whether there was any interesting parson at hand, as often in small towns, to guide and stimulate his unfolding thoughts, — upon such points we have no information. But there were things to be learned in the country town quite outside of books and pedagogues. There, while the poet listened to the “strain of strutting chanticleer,” and watched the “sun-burn’d sicklemen, of August weary,” putting on their rye-straw hats and making holiday with rustic nymphs, he could rejoice in

“Earth’s increase, foison plenty, Barns and garners never empty; Vines with clust’ring bunches growing; Plants with goodly burthen bowing;”

there he could see the “unbacked colts” prick their ears, advance their eyelids, lift up their noses, as if they smelt music; there he knew, doubtless, many a bank where the wild thyme grew and on which the moonlight sweetly slept; there he

watched the coming of “violets dim,” “pale primroses,” flower-de-luce, carnations, with “rosemary and rue” to keep their “savour all the winter long,”

“When icicles hang by the wall, And Dick the shepherd blows his nail, And Tom bears logs into the hall, And milk comes frozen home in pail.”

Such lore as this no books or college could impart.

It was this that Milton had in mind when he introduced Shakespeare and Ben Jonson into his poem “L’Allegro.” Milton was in his thirtieth year when Jonson, poet laureate, was laid to rest in Westminster Abbey; he was only a boy of eight years when Shakespeare died, but the beautiful sonnet written fourteen years later shows how lovingly he studied his works: —

“What needs my Shakespeare, for his honoured bones,” *etc.*

The poem “L’Allegro” and its fellow “Il Penseroso” describe the delights of Milton’s life at his father’s country house near Windsor Castle. He used often to ride into London to hear music or pass an evening at the theatre, as in the following lines: —

“Then to the well-trod stage anon, If Jonson’s learned sock be on, Or sweetest Shakespeare, fancy’s child, Warble his native woodnotes wild.”

This accurate and happy contrast exasperates the Baconizers, for it spoils their stock in trade, and accordingly they try their best to assure us that Milton did not know what he was writing about. They asseverate with vehemence that in all the seven-and-thirty plays there is no such thing as a native woodnote wild.

But before leaving the contrast we may pause for a moment to ask, Where did Ben Jonson get his learning? He was, as he himself tells us, “poorly brought up” by his stepfather, a bricklayer. He went to Westminster School, where he was taught by Camden, and he may have spent a short time at Cambridge, though this is doubtful. His schooling was nipped in the bud, for he had to go home and lay brick; and when he found such an existence insupportable he went into the army and fought in the Netherlands. At about the age of twenty we find him back in London, and there lose sight of him for five years, when all at once his great comedy “Every Man in his Humour” is performed, and makes him famous. Now, in such a life, when did Jonson get the time for his immense reading and

his finished classical scholarship? Reasoning after the manner of the Delia-Baconians, we may safely say that he could not possibly have accumulated the learning which is shown in his plays: therefore he could not have written those plays; therefore Lord Bacon must have written them! There are daring soarers in the empyrean who do not shrink from this conclusion; a doctor in Michigan, named Owen, has published a pamphlet to prove, among other things, that Bacon was the author of the plays which were performed and printed as Jonson's.

To return to Shakespeare. Somewhere about 1585, when he was one-and-twenty, he went to London, leaving his wife and three young children at Stratford. His father had lost money, and the fortunes of the family were at the lowest ebb. In London we lose sight of Shakespeare for a while, just as we lose sight of Jonson, until literary works appear. The work first published is "Venus and Adonis," one of the most exquisite pieces of diction in the English language. It was dedicated to Henry, Earl of Southampton, by William Shakespeare, whose authorship of the poem is asserted as distinctly as the title-page of "David Copperfield" proclaims that novel to be by Charles Dickens, yet some precious critics assure us that Shakespeare "could not" have written the poem, and never knew the Earl of Southampton. Some years ago, Mr. Appleton Morgan, who does not wish to be regarded as a Baconizer, published an essay on the Warwickshire dialect, in which he maintained that since no traces of that kind of speech occur in "Venus and Adonis," therefore it could not have been written by a young man fresh from a small Warwickshire town. This is a specimen of the loose kind of criticism which prepares soil for Delia-Baconian weeds to grow in. The poem was published in 1593, seven or eight years after Shakespeare's coming to London; and we are asked to believe that the world's greatest genius, one of the most consummate masters of speech that ever lived, could tarry seven years in the city without learning how to write what Hosea Biglow calls "citified English"! One can only exclaim with Gloster, "O monstrous fault, to harbour such a thought!"

In those years Shakespeare surely learned much else. It seems clear that he had a good reading acquaintance with French and Italian, though he often uses translations, as for instance Florio's version of Montaigne. In estimating what Shakespeare "must have" known or "could not have" known, one needs to use more caution than some of our critics display. For example, in "The Winter's Tale" the statue of Hermione is called "a piece ... now newly performed by that rare Italian master, Julio Romano." Now, since Romano is known as a great painter, but not as a sculptor, this has been cited as a blunder on Shakespeare's part. It appears, however, that the first edition of Vasari's "Lives of the Painters," published in 1550 and never translated from its original Italian, informs us that Romano did work in sculpture. In Vasari's second edition, published in 1568 and translated into several languages, this information is not given. From these facts, the erudite German critic Dr. Karl Elze, who is not a bit of a Delia-Baconian, but only an occasional sufferer from *vesania commentatorum*, introduces us to a solemn dilemma: either the author of "The Winter's Tale" must have consulted the first edition of Vasari in the original Italian, or else he must have travelled in Italy and gazed upon statues by Romano. Ah! prithee not so fast, worthy doctor; be not so lavish with these "musts." It is, I think, improbable that Shakespeare ever saw Italy except with the eyes of his imperial fancy. On the other hand, there are many indications that he could read Italian, but among them we cannot attach much importance to this one. Why should he not have learned from *hearsay* that Romano had made statues? In the name of common sense, are there no sources of knowledge save books? Or, since it was no unusual thing for Italian painters in the sixteenth century to excel in sculpture and architecture, why should not Shakespeare have assumed without verification that it was so in Romano's case? It was a tolerably safe assumption to make, especially in an age utterly careless of historical accuracy, and in a comedy which provides Bohemia with a sea-coast, and mixes up times and customs with as scant heed of probability as a fairy tale.

In arguing about what Shakespeare "must have" or "could not have" known, we must not forget that at no time or place since history began has human

thought fermented more briskly than in London while he was living there. The age of Drake and Raleigh was an age of efflorescence in dramatic poetry, such as had not been seen in the twenty centuries since Euripides died. Among Shakespeare's fellow craftsmen were writers of such great and varied endowments as Chapman, Marlowe, Greene, Nash, Peele, Marston, Dekker, Webster, and Cyril Tourneur. During his earlier years in London, Richard Hooker was master of the Middle Temple, and there a little later Ford and Beaumont were studying. The erudite Camden was master of Westminster School; among the lights of the age for legal learning were Edward Coke and Francis Bacon; at the same time, one might have met in London the learned architect Inigo Jones and the learned poet John Donne, both of them excellent classical scholars; there one would have found the divine poet Edmund Spenser, just come over from Ireland to see to the publication of his "Faerie Queene;" not long afterward came John Fletcher from Cambridge, and the acute philosopher Edward Herbert from Oxford and one and all might listen to the incomparable table-talk of that giant of scholarship, John Selden. The delights of the Mermaid Tavern, where these rare wits were wont to assemble, still live in tradition. As Keats says: —

"Souls of poets dead and gone, What Elysium have ye known, Happy field or mossy cavern, Choicer than the Mermaid Tavern?"

It has always been believed that this place was one of Shakespeare's favourite haunts. By common consent of scholars, it has been accepted as the scene of those contests of wit between Shakespeare and Jonson of which Fuller tells us when he compares Jonson to a Spanish galleon, built high with learning, but slow in movement, while he likens Shakespeare to an English cruiser, less heavily weighted, but apt for victory because of its nimbleness, — the same kind of contrast, by the way, as that which occurred to Milton.

But our Baconizing friends will not allow that Shakespeare ever went to the Mermaid, or knew the people who met there; at least, none but a few fellow dramatists. We have no documentary proof that he ever met with Raleigh, or Bacon, or Selden. Let us observe that, while these sapient critics are in some

cases ready to welcome the slightest circumstantial evidence, there are others in which they will accept nothing short of absolute demonstration. Did Shakespeare ever see a maypole? The word occurs just once in his plays, namely, in the "Midsummer Night's Dream," where little Hermia, quarrelling with tall Helena, calls her a "painted maypole;" but that proves nothing. I am not aware that there is any absolute documentary proof that Shakespeare ever set eyes on a maypole. It is nevertheless certain that in England, at that time, no boy could grow to manhood without seeing many a maypole. Common sense has some rights which we are bound to respect.

Now, Shakespeare's London was a small city of from 150,000 to 200,000 souls, or about the size of Providence or Minneapolis at the present time. In cities of such size, everybody of the slightest eminence is known all over town, and such persons are sure to be more or less acquainted with one another; it is a very rare exception when it is not so. Before his thirtieth year, Shakespeare was well known in London as an actor, a writer of plays, and the manager of a prominent theatre. It was in that year that Spenser, in his "Colin Clout's Come Home Again," alluding to Shakespeare under the name of Aëtion, or "eagle-like," paid him this compliment: —

"And there, though last, not least, is Aëtion; A gentler shepherd may nowhere be found; Whose muse, full of high thought's invention, Doth, like himself, heroically sound."

Four years after this, in 1598, Francis Meres published his book entitled "Palladis Tamia," a very interesting contribution to literary history. The author, who had been an instructor in rhetoric in the University of Oxford, was then living in London, near the Globe Theatre. In this book Meres tells his readers that "the sweet witty soul of Ovid lives in mellifluous and honey-tongued Shakespeare; witness his 'Venus and Adonis,' his 'Lucrece,' his sugared sonnets among his private friends, etc.... As Plautus and Seneca are accounted the best for comedy and tragedy among the Latins, so Shakespeare among the English is the most excellent in both kinds for the stage: for comedy, witness his 'Gentlemen of Verona,' his 'Errors,' his 'Love's Labour's Lost,' his 'Love's

Labour's Wonne,' his 'Midsummer Night's Dream,' and his 'Merchant of Venice;' for tragedy, his 'Richard II.,' 'Richard III.,' 'Henry IV.,' 'King John,' 'Titus Andronicus,' and his 'Romeo and Juliet.' As Epius Stolo said that the Muses would speak with Plautus's tongue if they would speak Latin, so I say that the Muses would speak with Shakespeare's fine filed phrase if they would speak English." In other passages Meres mentions Shakespeare's lyrical quality, for which he likens him to Pindar and Catullus; and the glory of his style, for which he places him along with Virgil and Homer. It thus appears that, at the age of thirty-four, this poet from Stratford was already ranked by critical scholars by the side of the greatest names of antiquity. Let me add that the popularity of his plays was making him a somewhat wealthy man, so that he had relieved his father from pecuniary troubles, and had just bought for himself the Great House at Stratford where the last years of his life were spent. His income seems already to have been equivalent to $10,000 a year in our modern money. His position had come to be such that he could extend patronage to others. It was in 1598 that through his influence Ben Jonson obtained, after many rebuffs, his first hearing before a London audience, when "Every Man in his Humour" was brought out at Blackfriars Theatre, with Shakespeare acting one of the parts.

To suppose that such a man as this, in a town the size of Minneapolis, connected with a principal theatre, writer of the most popular plays of the day, a poet whom men were already coupling with Homer and Pindar, — to suppose that such a man was not known to all the educated people in the town is simply absurd. There were probably very few men, women, or children in London, between 1595 and 1610, who did not know who Shakespeare was when he passed them in the street; and as for such wits as drank ale and sack at the Mermaid, as for Raleigh and Bacon and Selden and the rest, to suppose that Shakespeare did not know them well — nay, to suppose that he was not the leading spirit and brightest wit of those ambrosial nights — is about as sensible as to suppose that he never saw a maypole.

The facts thus far contemplated point to one conclusion. The son of a well-to-do magistrate in a small country town is born with a genius which the world has

never seen surpassed. Coming to London at the age of twenty-one, he achieves such swift success that within thirteen years he is recognized as one of the chief glories of English literature. During this time he is living in the midst of such a period of intellectual ferment as the world has seldom seen, and in a position which necessarily brings him into frequent contact with all the most cultivated men. Under such circumstances, there is nothing in the smallest degree strange or surprising in his acquiring the varied knowledge which his plays exhibit. The major premise of the Delia-Baconians has, therefore, nothing in it whatever. It is a mere bubble, an empty vagary, — only this, and nothing more.

Before leaving this part of the subject, however, there are still one or two points of interest to be mentioned. Shakespeare shows a fondness for the use of phrases and illustrations taken from the law; and on such grounds our Delia-Baconians argue that the plays must have been written by an eminent lawyer, such as the Lord Chancellor Bacon undoubtedly was. They feel that this is a great point on their side. One instance, cited by Nathaniel Holmes and other Baconizers, is the celebrated case of Sir James Hales, who committed suicide by drowning, and was accordingly buried at the junction of crossroads, with a stake through his body, while all his property was forfeited to the Crown. Presently his widow brought suit for an estate by survivorship in joint-tenancy. Her case turned upon the question whether the forfeiture occurred during her late husband's lifetime: if it did, he left no estate which she could take; if it did not, she took the estate by survivorship. The lady's counsel argued that so long as Sir James was alive he had not been guilty of suicide, and the instant he died the estate vested in his widow as joint-tenant. But the opposing counsel argued that the instant Sir James voluntarily made the fatal plunge, and therefore before the breath had left his body, the guilt of suicide was incurred and the forfeiture took place. The court decided in favour of this view, and the widow got nothing.

There can be little doubt that this decision is travestied in the conversation of the two clowns in "Hamlet" with regard to Ophelia's right to Christian burial. The first clown makes precisely the point upon which the ingenious counsel for the defendant had rested his argument: "If I drown myself wittingly, it argues an

act, and an act hath three branches; it is to act, to do, and to perform." In making this distinction the counsel had maintained that the second branch, or the doing, was the only thing for the law to consider. The talk of the clowns brings out the humour of the case with Shakespeare's inimitable lightness of touch.

The report of the Hales case was published in the volume of "Plowden's Reports" which was issued in 1578; and Mr. Holmes informs us that "there is not the slightest ground for a belief, on the facts which we know, that Shakespeare ever looked into 'Plowden's Reports.'" This is one of the cases where your stern Baconizer will not hear of anything short of absolute demonstration. Mere considerations of human probability might disturb the cogency of a neat little pair of syllogisms: —

(1.) The author of "Hamlet" must have read Plowden. Shakespeare never read Plowden. Therefore Shakespeare was not the author of "Hamlet."

(2.) The author of "Hamlet" must have read Plowden. The lawyer, Bacon, must have read Plowden. Therefore Bacon wrote "Hamlet."

With regard to the major premise here, one might freely deny it. The author of "Hamlet" might easily have got all the knowledge involved from an evening chat with some legal friend at an alehouse. Then as to the minor premise, what earthly improbability is there in Shakespeare's having dipped into Plowden? Can anybody but lawyers or law students enjoy reading reports of law cases? I remember that, when I was about ten years old, a favourite book with me was one entitled "Criminal Trials of All Countries, by a Member of the Philadelphia Bar." I read it and read it, until forbidden to read such a gruesome book, and then I read it all the more. One of the most elaborate reports in it was that of the famous case of Captain Donellan, tried in 1780 on a charge of poisoning his wife's brother, Sir Theodosius Boughton, a dissipated and diseased young man, who died very suddenly one day. A post-mortem inspection showed spots in the intestine, which three ordinary country doctors ascribed to poisoning by laurel water, while Sir John Hunter, one of the greatest authorities in Europe, testified that they might equally well have ensued upon death from apoplexy. The judge, Sir Francis Buller, saw fit, in his charge, to reckon this as the testimony of three

experts against one; and thus the jury were driven to a verdict of murder, though it was not proved that any murder had been committed. Captain Donellan, who lived in his brother-in-law's house, was a man of blameless life, an amateur chemist, much given to fooling with odorous liquids and hissing retorts. It was proved that he had been distilling laurel water, and one or two other suspicious circumstances were alleged. The whole trial was begun and ended on the same day, the jury were about twenty minutes in finding the captain guilty, and three days afterward he was hung. It was a case where reason was submerged and drowned under a wave of angry prejudice shrieking for a victim.

Now, if I did not forthwith write a play, and take the occasion to ridicule the judge's charge to the jury, it was because I could not write a play, not because I did not fully appreciate the insult to law and common sense which that unfortunate case involved. In view of this and other experiences, when I now read a play or a novel that contains an intelligent allusion to some law case, I am far from feeling driven to the conclusion that it must have been written by a lord chancellor.

If Shakespeare's dramas are proved by such internal evidence to have been written by a lawyer, that lawyer, by parity of reasoning, could hardly have been Francis Bacon. For he was preëminently a chancery lawyer, and chancery phrases are in Shakespeare conspicuously absent. The word "injunctions" occurs five times in the plays, once perhaps with a reference to its legal use ("Merchant of Venice," II. ix.); but nowhere do we find any exhibition of a knowledge of chancery law. His allusions to the common law are often very amusing, as when, in "Love's Labour's Lost," at the end of a brisk punning-match between Boyet and Maria, he offers to kiss her, laughingly asking for a grant of pasture on her lips, and she replies, "Not so; my lips are no common, though several they be." Again, in "The Comedy of Errors," "Dromio asserts that there is no time for a bald man to recover his hair. This having been written, the law phrase suggested itself, and he was asked whether he might not do it by fine and recovery, and this suggested the efficiency of that proceeding to bar heirs; and this started the conceit that thus the lost hair of another man would be recovered." In such

quaint allusions to the common law and its proceedings Shakespeare abounds, and we cannot help remembering that Nash, in his prefatory epistle to Greene's "Menaphon," printed about 1589, makes sneering mention of Shakespeare as a man who had left the "trade of Noverint," whereunto he was born, in order to try his hand at tragedy. The "trade of Noverint" was a slang expression for the business of attorney; and this passage has suggested that Shakespeare may have spent some time in a law office, as student or as clerk, either before leaving Stratford, or perhaps soon after his arrival in London. This seems to me not improbable. On the other hand, "The Merchant of Venice" contains such crazy law that it is hard to imagine it coming even from a lawyer's clerk. At all events, we may safely say that the legal knowledge exhibited in the plays is no more than might readily have been acquired by a man of assimilative genius associating with lawyers. It simply shows the range and accuracy of Shakespeare's powers of observation.

Let us come now to the second part of the Delia Bacon theory. Having satisfied herself that William Shakespeare could not have written the poems and plays published under his name, she jumped to the conclusion that Francis Bacon was the author. Surely, a singular choice! Of all men, why Francis Bacon? Why not, as I said before, George Chapman or Ben Jonson, men who were at once learned scholars and great poets? Chapman, like Marlowe, could write the "mighty line." Jonson had rare lyric power; his verses sing, as witness the wonderful "Do but look on her eyes," which Francis Bacon could no more have written than he could have jumped over the moon. To pitch upon Bacon as the writer of "Twelfth Night" or "Romeo and Juliet" is about as sensible as to assert that "David Copperfield" must have been written by Charles Darwin. After a familiar acquaintance of more than forty years with Shakespeare's works, of nearly forty years with Bacon's, the two men impress me as simply antipodal one to the other. A similar feeling was entertained by the late Mr. Spedding, the biographer and editor of Bacon; and no one has more happily hit off the vagaries of the Baconizers than the foremost Bacon scholar now living, Dr. Kuno Fischer, in his recent address before the Shakespeare Society at

Weimar. I used to wonder whether the Bacon-Shakespeare people really knew anything about Bacon, and, now that chance has led me to read their books, I am quite sure they do not. To their minds, his works are simply a storehouse of texts which serve them for controversial missiles, very much as scattered texts from the Bible used to serve our uncritical grandfathers.

Francis Bacon was one of the most interesting persons of his time, and, as is often the case with such many-sided characters, posterity has held various opinions about him. On the one hand, his fame has grown brighter with the years; on the other hand, it has come to be more or less circumscribed and limited. Pope's famous verse, "The wisest, brightest, meanest of mankind," may be disputed in all its three specifications. Bacon's treatment of Essex, which formerly called forth such bitter condemnation, has been, I think, completely justified; and as for the taking of bribes, which led to his disgrace, there were circumstances which ought largely to mitigate the severity of our judgment. But if Bacon was far from being a mean example of human nature, it is surely an exaggeration to call him the wisest and brightest of mankind. He was a scholar and critic of vast accomplishments, a writer of noble English prose, and a philosopher who represented rather than inaugurated a most beneficial revolution in the aims and methods of scientific inquiry. He is one of the real glories of English literature, but he is also one of the most overrated men of modern times. When we find Macaulay saying that Bacon had "the most exquisitely constructed intellect that has ever been bestowed on any of the children of men," we need not be surprised to find that his elaborate essay on Bacon is as false in its fundamental conception as it is inaccurate in details. For a long time it was one of the accepted commonplaces that Bacon inaugurated the method by which modern discoveries in physical science have been made. Early in the present century, such writers on the history of science as Whewell began to show the incorrectness of this notion, and it was completely exploded by Stanley Jevons in his "Principles of Science," the most profound treatise on method that has appeared in the last fifty years. Jevons writes: "It is wholly a mistake to say that modern science is the result of the Baconian philosophy; it is

the Newtonian philosophy and the Newtonian method which have led to all the great triumphs of physical science, and ... the 'Principia' forms the true Novum Organon." This statement of Jevons is thoroughly sound. The great Harvey, who knew how scientific discoveries are made, said with gentle sarcasm that Bacon "wrote philosophy like a lord chancellor;" yet Harvey would not have denied that the chancellor was doing noble service as the eloquent expounder of many sides of the scientific movement that was then gathering strength. Bacons mind was eminently sagacious and fertile in suggestions, but the supreme creative faculty, the power to lead men into new paths, was precisely the thing which he did not possess. His place is a very high one among intellects of the second order; but to rank him with such godlike spirits as Newton, Spinoza, and Leibnitz simply shows that one has no real knowledge of the work which such men have done.

So much for Bacon himself. With regard to him as possible author of the Shakespeare poems and plays, it is difficult to imagine so learned a scholar making the kind of mistakes that abound in those writings. Bacon would hardly have introduced clocks into the Rome of Julius Cæsar; nor would he have made Hector quote Aristotle, nor Hamlet study at the University of Wittenberg, founded five hundred years after Hamlet's time; nor would he have put pistols into the age of Henry IV., nor cannon into the age of King John; and we may be pretty sure that he would not have made one of the characters in "King Lear" talk about Turks and Bedlam. In this severely realistic age of ours, writers are more on their guard against such anachronisms than they were in Shakespeare's time; in his works we cannot call them serious blemishes, for they do not affect the artistic character of the plays, but they are certainly such mistakes as a scholar like Bacon would not have committed.

Deeper down lies the contrast involved in the fact that Bacon was in a high degree a subjective writer, from whom you are perpetually getting revelations of his idiosyncrasies and moods, whereas of all writers in the world Shakespeare is the most completely objective, the most absorbed in the work of creation. In the one writer you are always reminded of the man Bacon; in the other the

personality is never thrust into sight. Bacon is highly self-conscious; from Shakespeare self-consciousness is absent.

The contrast is equally great in respect of humour. I would not deny that Bacon relished a joke, or could perpetrate a pun; but the bubbling, seething, frolicsome, irrepressible drollery of Shakespeare is something quite foreign to him. Read his essays, and you get charming English, wide knowledge, deep thought, keen observation, worldly wisdom, good humour, sweet serenity; but exuberant fun is not there. In writing these essays Bacon was following an example set by Montaigne, but, as contrasted with the delicate effervescent humour of the Frenchman, his style seems sober and almost insipid. Only fancy such a man trying to write "The Merry Wives of Windsor"!

Both Shakespeare and Bacon were sturdy and rapacious purloiners. They seized upon other men's bright thoughts and made them their own without compunction and without acknowledgment; and this may account for sundry similarities which may be culled from the plays and from Bacon's works, upon which Baconizing text-mongers are wont to lay great stress as proof of common authorship. Some such resemblances may be due to borrowing from common sources; others are doubtless purely fanciful; others indicate either that Shakespeare cribbed from Bacon or *vice versa*. Here are a few miscellaneous instances: —

Where Bacon says, "Be so true to thyself as thou be not false to others" ("Essay of Wisdom"), Shakespeare says: —

"To thine own self be true, And it must follow, as the night the day, Thou canst not then be false to any man."

(Hamlet, I. iii.)

This looks as if one writer might have copied from the other. If so, it is Bacon who is the thief, for the lines occur in the quarto "Hamlet" published in 1603, whereas the "Essay of Wisdom" was first published in 1612.

Again, where Bacon, in the "Essay of Gardens," says, "The breath of flowers comes and goes like the warbling of music," it reminds one strongly of the exquisite passage in "Twelfth Night" where the Duke exclaims: —

“That strain again! it had a dying fall: O, it came o’er my ear like the sweet south, That breathes upon a bank of violets, Stealing and giving odour.”

I have little doubt that Bacon had this passage in mind when he wrote the “Essay of Gardens,” which was first published in 1625, two years later than the complete folio of Shakespeare. This effectually disposes of the attempt to cite these correspondences in evidence that Bacon wrote the plays.

Another instance is from “Richard III.:” —

“By a divine instinct men’s minds mistrust Ensuing danger; as, by proof, we see The waters swell before a boisterous storm.”

Bacon, in the “Essay of Sedition,” writes, “As there are ... secret swellings of seas before a tempest, so there are in states.” But this essay was not published till 1625, so again we find him copying Shakespeare. Many such “parallelisms,” cited to prove that Bacon wrote Shakespeare’s works, do really prove that he read them with great care and remembered them well, or else took notes from them.

An interesting illustration of the helpless ignorance shown by Baconizers is furnished by a remark of Sir Toby Belch in “Twelfth Night.” In his instructions to that dear old simpleton, Sir Andrew Aguecheek, about the challenge, Sir Toby observes, “If thou thou’st him some thrice, it shall not be amiss.” In Elizabethan English, to address a man as “thou” was to treat him as socially inferior; such familiarity was allowable only between members of the same family or in speaking to servants, just as you address your wife, and likewise the cook and housemaid, by their Christian names, while with the ladies of your acquaintance such familiarity would be rudeness. The same rule for the pronoun survives to-day in French and German, but has been forgotten in English. In the trial of Sir Walter Raleigh in 1604, Justice Coke insulted the prisoner by calling out, “Thou viper! for I *thou* thee, thou traitor!” Now, one of our Baconizers thinks that his idol, in writing “Twelfth Night,” introduced Sir Toby’s suggestion in order to recall to the audience Coke’s abusive remark. Once more, a little attention to dates would have prevented the making of a bad blunder. We know from Manningham’s Diary that “Twelfth Night” had been on the stage nearly two

years before Raleigh's trial. On the other hand, to say that the play might have suggested to Coke his coarse speech would be admissible, but idle, inasmuch as the expression "to *thou* a man" was an every-day phrase in that age.

Here it naturally occurs to me to mention the "Promus," about which as much fuss has been made as if it really furnished evidence in support of the Baconian folly. There is in the British Museum a manuscript, in Bacon's handwriting, entitled "Promus of Formularies and Elegancies." "Promus" means "storehouse" or "treasury." A date at the top of the first page shows that it was begun in December, 1594; there is nothing, I believe, to show over how many years it extended. It is a scrap-book in which Bacon jotted down such sentences, words, and phrases as struck his fancy, such as might be utilized in his writings. These neatly turned phrases, these "formularies and elegancies," are gathered from all quarters, — from the Bible, from Virgil and Horace, from Ovid and Seneca, from Erasmus, from collections of proverbs in various languages, *etc.* As there is apparently nothing original in this scrap-bag, Mr. Spedding did not think it worth while to include it in his edition of Bacon's works, but in the fourteenth volume he gives a sufficient description of it, with illustrative extracts. In 1883 Mrs. Henry Pott published the whole of this "Promus" manuscript, and swelled it by comments and dissertations into a volume of 600 octavo pages. She had found in it several hundred expressions which reminded her of passages in Shakespeare, and so it confirmed her in the opinion which she already entertained that Bacon was the author of Shakespeare's works. Thus, when the "Promus" has a verse from Ovid, which means, "And the forced tongue begins to lisp the sound commanded," it reminds Mrs. Pott of divers lines in which Shakespeare uses the word "lisp," as for example, in "As You Like It," "you lisp and wear strange suits;" and she jumps to the conclusion that when Bacon jotted down the verse from Ovid, it was as a preparatory study toward "As You Like It," and any other play that contains the word "lisp:" therefore Bacon wrote all those plays, *Q. E. D.*! On the next page we find Virgil's remark, "Thus was I wont to compare great things with small," made the father of Falstaff's "base comparisons," and Fluellen's "Macedon and Monmouth," as well as honest Dogberry's

"comparisons are odorous." When one reads such things, evidently printed in all seriousness, one feels like asking Mrs. Pott, in the apt words of Shakespeare's friend Fletcher, "What mare's nest hast thou found?" ("Bonduca," V. ii.)

There are many phrases, however, in the "Promus" which undoubtedly agree with phrases in the plays. They show that Bacon heard or read the plays with great interest, and culled from them his "elegancies" with no stinted hand. As for Mrs. Pott's bulky volume, it brings us so near to the final *reductio ad absurdum* of the Bacon theory that we hardly need spend many words upon the gross improbabilities which that theory involves. The plays of Shakespeare were universally ascribed to him by his contemporaries; many of them were published during his lifetime with his name upon the title-page as the author; all were collected and published together by Hemminge and Condell, two of his fellow actors, seven years after his death; and for more than two centuries nobody ever dreamed of looking for a different authorship, or of associating the plays with Bacon. But this Chimborazo of *prima facie* evidence becomes a mere mole-hill in the hands of your valiant Baconizer. It is all clear to him. Bacon did not acknowledge the authorship of these works because such literature was deemed frivolous, and current prejudices against theatres and playwrights might injure his hopes of advancement at the bar and in political life. Therefore, by some sort of private understanding with the ignorant and sordid wretch Shakespeare, at whose theatre they were brought out, their authorship was ascribed to him, the real author died without revealing the secret, and the whole world was deceived until the days of Delia Bacon.

But there are questions which even this ingenious hypothesis fails to answer. Why should Bacon have taken the time to write those thirty-seven plays, two poems, and one hundred and fifty-four sonnets, if they were never to be known as his works? Not for money, surely, for that grasping Shakespeare seems to have got the money as well as the fame; Bacon died a poor man. His principal aim in life was to construct a new system of philosophy; on this noble undertaking he spent such time as he could save from the exactions of his public

career as member of Parliament, chancery lawyer, solicitor-general, attorney-general, lord chancellor; and he died with this work far from finished. The volumes which he left behind him were only fragments of the mighty structure which he had planned. We may well ask, Where did this overburdened writer find the time for doing work of another kind voluminous enough to fill a lifetime, and what motive had he for doing it without recompense in either fame or money? Baconizers find it strange that Shakespeare's will contains no reference to his plays as literary property. The omission is certainly interesting, since it seems to indicate that he had parted with his pecuniary interest in them, — had perhaps sold it out to the Globe Theatre. If this omission can be held to show that Shakespeare was lacking in fondness for the productions of his own genius, what shall be said of the notion that Bacon spent half his life in writing works the paternity of which he must forever disown?

This question is answered by Mr. Ignatius Donnelly, a writer who speculates with equal infelicity on all subjects, but never suffers for lack of boldness. He published in 1887 a book even bigger than that of Mrs. Pott, for it has nearly 1000 pages. Its title is, "The Great Cryptogram," and its thesis is, that Bacon really did claim the authorship of the Shakespeare plays. Only the claim was made in a cipher, and if you simply make some numbers mean some words, and other words mean other numbers, and perform a good many sums in what the Mock Turtle called "ambition, distraction, uglification, and derision," you will be able to read this claim between the lines, along with much other wonderful information. Thus does the arithmetical Donnelly carry us quite a long stride nearer to the *reductio ad absurdum*, or suicide point, than we were left by Mrs. Pott, with her lisping and limping comparisons.

But before we come to the jumping-off place, let us pause for a moment and take a retrospective glance at the natural history of the Bacon-Shakespeare craze. What was it that first unlocked the sluice-gates, and poured forth such a deluge of foolishness upon a sorely suffering world? It will hardly do to lay the blame upon poor Delia Bacon. Her suggestions would have borne no fruit had they not found a public, albeit a narrow one, in some degree prepared for them. Who,

then, prepared the soil for the seeds of this idiocy to take root? Who but the race of fond and foolish Shakespeare commentators, with their absurd claims for their idol? During the eighteenth century Shakespeare was generally underrated. Voltaire wondered how a nation that possessed such a noble tragedy as Addison's "Cato" could endure such plays as "Hamlet" and "Othello." In the days of Scott and Burns a reaction set in; and Shakespeare worship reached its height when the Germans took it up, and, not satisfied with calling him the prince of poets and peerless master of dramatic art, began to discover in his works all sorts of hidden philosophy and impossible knowledge. Of the average German mind Lowell good-naturedly says that "it finds its keenest pleasure in divining a profound significance in the most trifling things, and the number of mare's nests that have been stared into by the German *Gelehrter* through his spectacles passes calculation." But the Germans are not the only sinners; let me cite an instance from near home. In the quarto "Hamlet" of 1603 we read: —

"Full forty years are past, their date is gone, Since happy time joined both our hearts as one: And now the blood that filled my youthful veins Runs weakly in their pipes," *etc.*

Whereupon Mr. Edward Vining calls upon us to observe how Shakespeare, "to whom all human knowledge seems to be but a matter of instinct, in [these lines] asserts the circulation of the blood in the veins and 'pipes,' a truth which Harvey probably did not even suspect until at least thirteen years later," *etc.* Does Mr. Vining really suppose that what Harvey did was to discover that blood runs in our veins? A little further study of history would have taught him that even the ancients knew that blood runs in the veins. About fourteen hundred years before "Hamlet" was written, Galen proved that it also runs in the arteries. After Galen's time, it was believed that the dark blood nourishes such plebeian organs as the liver, while the bright blood nourishes such lordly organs as the brain, and that the interchange takes place in the heart; until the sixteenth century, when Vesalius proved that the interchange does not take place in the heart, and the martyr Servetus proved that it does take place in the lungs; and so on till 1619, when Harvey discovered that dark blood is brought by the veins to

the right side of the heart, and thence driven into the lungs, where it becomes bright and flows into the left side of the heart, thence to be propelled throughout the body in the arteries. That it then grows dark and returns through the veins Harvey believed, but no one could tell how, until, forty years later, Malpighi with his microscope detected the capillaries. Now to talk about Shakespeare discerning as if by instinct a truth which Harvey afterward discovered is simply silly. Instead of showing rare scientific knowledge, his remark about blood running in the veins is one that anybody might have made.

This is a fair specimen of the ignorant way in which doting commentators have built up an impossible Shakespeare, until at last they have provoked a reaction. Sooner or later the question was sure to arise, Where did your Stratford boy get all this abstruse scientific knowledge? The keynote was perhaps first sounded by August von Schlegel, who persuaded himself that Shakespeare had mastered "all the things and relations of this world," and then went on to declare that the accepted account of his life must be a mere fable. Thus we reach the point from which Delia Bacon started.

It may safely be said that all theories of Shakespeare's plays which suppose them to be attempts at teaching occult philosophical doctrines, or which endow them with any other meanings than those which their words directly and plainly convey, are a delusion and a snare. Those plays were written, not to teach philosophy, but to fill the theatre and make money. They were written by a practised actor and manager, the most consummate master of dramatic effects that ever lived; a poet unsurpassed for fertility of invention, unequalled for melody of language, unapproached for delicacy of fancy, inexhaustible in humour, profoundest of moralists; a man who knew human nature by intuition, as Mozart knew counterpoint or as Chopin knew harmony. The name of that writer was none other than William Shakespeare of Stratford-on-Avon.

It was inevitable that the Bacon folly, after once adopting such methods as those of Mrs. Pott and Mr. Donnelly, should proceed to commit suicide by piling up extravagances. By such methods one can prove anything, and accordingly we

find these writers busy in tracing Bacon's hand in the writings of Greene, Marlowe, Shirley, Marston, Massinger, Middleton, and Webster. They are sure that he was the author of Montaigne's Essays, which were afterward translated into what we have always supposed to be the French original. Mr. Donnelly believes that Bacon also wrote Burton's "Anatomy of Melancholy." Next comes Dr. Orville Owen with a new cipher, which proves that Bacon was the son of Queen Elizabeth by Robert Dudley, and that he was the author of the "Faerie Queene" and other poems attributed to Edmund Spenser. Finally we have Mr. J. E. Roe, who does not mean to be outdone. He asks us what we are to think of the notion that an ignorant tinker, like John Bunyan, could have written the most perfect allegory in any language. Perish the thought! Nobody but Bacon could have done it. Of course Bacon had been more than fifty years in his grave when "Pilgrim's Progress" was published as Bunyan's. But your true Baconizer is never stopped by trifles. Mr. Roe assures us that Bacon wrote that heavenly book, as well as "Robinson Crusoe" and the "Tale of a Tub;" which surely begins to make him seem ubiquitous and everlasting. If things go on at this rate, we shall presently have a religious sect holding as its first article of faith that Francis Bacon created the heavens and the earth in six days, and rested on the seventh day.

November, 1896.

The Classification of the Sciences — Francis Bacon by Walter Libby

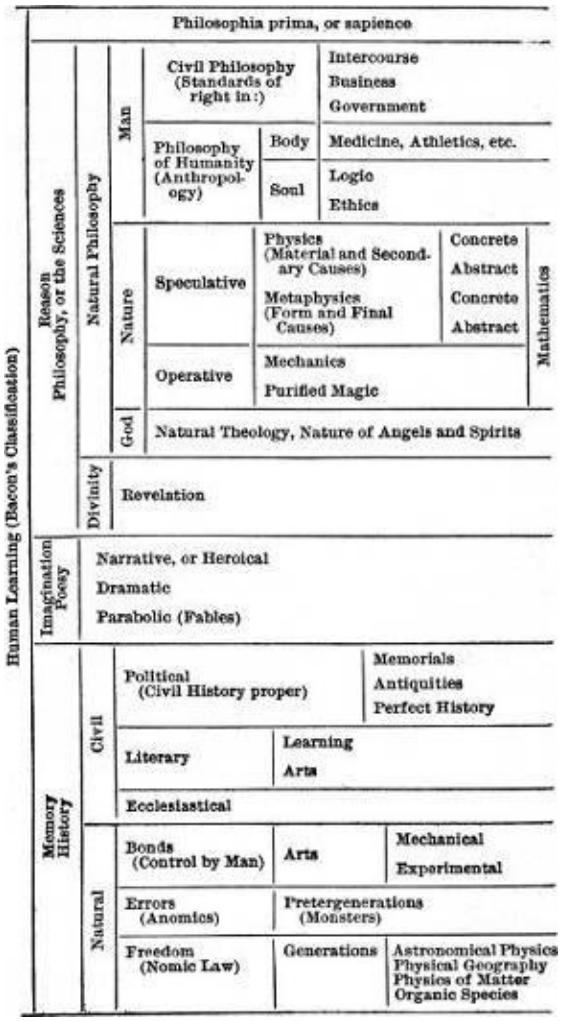
From 'An Introduction to the History of Science'

The preceding chapter has shown that there is a continuity in the development of single sciences. The astronomy, or the chemistry, or the mathematics, of one period depends so directly on the respective science of the foregoing period, that one feels justified in using the term "growth," or "evolution," to describe their progress. Now a vital relationship can be observed not only among different stages of the same science, but also among the different sciences. Physics, astronomy, and chemistry have much in common; geometry, trigonometry, arithmetic, and algebra are called "branches" of mathematics; zoölogy and botany are biological sciences, as having to do with living species. In the century following the death of Copernicus, two great scientists, Bacon and Descartes, compared all knowledge to a tree, of which the separate sciences are branches. They thought of all knowledge as a living organism with an interconnection or continuity of parts, and a capability of growth.

By the beginning of the seventeenth century the sciences were so considerable that in the interest of further progress a comprehensive view of the tree of knowledge, a survey of the field of learning, was needed. The task of making this survey was undertaken by Francis Bacon, Lord Verulam (1561-1626). His classification of human knowledge was celebrated, and very influential in the progress of science. He kept one clear purpose in view, namely, the control of nature by man. He wished to take stock of what had already been accomplished, to supply deficiencies, and to enlarge the bounds of human empire. He was acutely conscious that this was an enterprise too great for any one man, and he used his utmost endeavors to induce James I to become the patron of the plan. His project admits of very simple statement now; he wished

to edit an encyclopedia, but feared that it might prove impossible without coöperation and without state support. He felt capable of furnishing the plans for the building, but thought it a hardship that he was compelled to serve both as architect and laborer. The worthiness of these plans was attested in the middle of the eighteenth century, when the great French *Encyclopaedia* was projected by Diderot and D'Alembert. The former, its chief editor and contributor, wrote in the Prospectus: "If we come out successful from this vast undertaking, we shall owe it mainly to Chancellor Bacon, who sketched the plan of a universal dictionary of sciences and arts at a time when there were not, so to speak, either arts or sciences. This extraordinary genius, when it was impossible to write a history of what men knew, wrote one of what they had to learn."

Bacon, as we shall amply see, was a firm believer in the study of the arts and occupations, and at the same time retained his devotion to principles and abstract thought. He knew that philosophy could aid the arts that supply daily needs; also that the arts and occupations enriched the field of philosophy, and that the basis of our generalizations must be the universe of things knowable. "For," he writes, "if men judge that learning should be referred to use and action, they judge well; but it is easy in this to fall into the error pointed out in the ancient fable; in which the other parts of the body found fault with the stomach, because it neither performed the office of motion as the limbs do, nor of sense, as the head does; but yet notwithstanding it is the stomach which digests and distributes the aliment to all the rest. So that if any man think that philosophy and universality are idle and unprofitable studies, he does not consider that all arts and professions are from thence supplied with sap and strength." For Bacon, as for Descartes, natural philosophy was the trunk of the tree of knowledge.


Human Learning (Bacon's Classification)
Philosophia prima, or sapience
Reason
Philosophy, or the Sciences
Natural Philosophy
Man
Civil Philosophy (Standards of right in:)
Intercourse
Business
Government
Philosophy of Humanity (Anthropology)
Body
Medicine, Athletics, etc.
Soul
Logic
Ethics
Nature
Speculative
Physics (Material and Secondary Causes)
Concrete
Abstract
Metaphysics (Form and Final Causes)
Concrete
Abstract
Mathematics
Operative
Mechanics
Purified Magic
God
Natural Theology, Nature of Angels and Spirits
Divinity
Revelation
Imagination
Poesy
Narrative, or Heroical
Dramatic
Parabolic (Fables)
Memory
History
Civil
Political (Civil History proper)
Memorials
Antiquities
Perfect History
Literary
Learning
Arts
Ecclesiastical
Natural
Bonds (Control by Man)
Arts
Mechanical
Experimental
Errors (Anomics)
Pretergenerations (Monsters)
Freedom (Nomic Law)
Generations
Astronomical Physics
Physical Geography
Physics of Matter
Organic Species

	Knowledge Classified (Hugo of St. Victor, d. 1141).	
Theoretical	Theology Natural Philosophy (Physic)	
	Mathematics	Arithmetic Music (study of harmony) Geometry Astronomy
Practical (Moral)	Ethics, or individual morality Economics, or family morality Politics, or civics	
Mechanical	Weaving, spinning, sewing; work in wool, flax, etc. Equipment—arms, ships; work in stone, wood, metal Navigation Agriculture Hunting, fishing, foods Medicine Theatricals—drama, music, athletics, etc.	
Logical	Oratory Grammar Dialectic Rhetoric	

On the other hand, he looked to the arts, crafts, and occupations as a source of scientific principles. In his survey of learning he found some records of agriculture and likewise of many mechanical arts. Some think them a kind of dishonor. “But if my judgment be of any weight, the use of History Mechanical is, of all others, the most radical and fundamental towards natural philosophy.” When the different arts are known, the senses will furnish sufficient concrete material for the information of the understanding. The record of the arts is of most use because it exhibits things in motion, and leads more directly to practice. “Upon this history, therefore, mechanical and illiberal as it may seem (all fineness and daintiness set aside), the greatest diligence must be bestowed.” “Again, among the particular arts those are to be preferred which exhibit, alter, and prepare natural bodies and materials of things as agriculture, cooking,

chemistry, dyeing; the manufacture of glass, enamel, sugar, gunpowder, artificial fires, paper and the like." Weaving, carpentry, architecture, manufacture of mills, clocks, *etc.* follow. The purpose is not solely to bring the arts to perfection, but all mechanical experiments should be as streams flowing from all sides into the sea of philosophy.

Shortly after James I came to the throne in 1603, Bacon published his *Advancement of Learning*. He continued in other writings, however, to develop the organization of knowledge, and in 1623 summed up his plan in the *De Augmentis Scientiarum*.

A recent writer (Pearson, 1900) has attempted to summarize Bacon's classification of the different branches of learning. When one compares this summary with an outline of the classification of knowledge made by the French monk, Hugo of St. Victor, who stands midway between Isidore of Seville (570-636) and Bacon, some points of resemblance are of course obvious. Moreover, Hugo, like Bacon, insisted on the importance of not being narrowly utilitarian. Men, he says, are often accustomed to value knowledge not on its own account but for what it yields. Thus it is with the arts of husbandry, weaving, painting, and the like, where skill is considered absolutely vain, unless it results in some useful product. If, however, we judged after this fashion of God's wisdom, then, no doubt, the creation would be preferred to the Creator. But wisdom is life, and the love of wisdom is the joy of life (*felicitas vitæ*).

Nevertheless, when we compare these classifications diligently, we find very marked differences between Bacon's views and the medieval. The weakest part of Hugo's classification is that which deals with natural philosophy. *Physica*, he says, undertakes the investigation of the causes of things in their effects, and of effects in their causes. It deals with the explanation of earthquakes, tides, the virtues of plants, the fierce instincts of wild animals, every species of stone, shrub, and reptile. When we turn to his special work, however, on this branch of knowledge, *Concerning Beasts and Other Things*, we find no attempt to subdivide the field of *physica*, but a series of details in botany, geology, zoölogy, and human anatomy, mostly arranged in dictionary form.

When we refer to Bacon's classification we find that Physics corresponds to Hugo's *Physica*. It studies natural phenomena in relation to their material causes. For this study, Natural History, according to Bacon, supplies the facts. Let us glance, then, at his work on natural history, and see how far he had advanced from the medieval toward the modern conception of the sciences.

For purposes of scientific study he divided the phenomena of the universe into (1) Celestial phenomena; (2) Atmosphere; (3) Globe; (4) Substance of earth, air, fire, water; (5) Genera, species, *etc.* Great scope is given to the natural history of man. The arts are classified as *nature modified by man*. *History* means, of course, descriptive science.

Bacon's Catalogue of Particular Histories by Titles (1620) 1. History of the Heavenly Bodies; or Astronomical History.

2. History of the Configuration of the Heavens and the parts thereof towards the Earth and the parts thereof; or Cosmographical History.

3. History of Comets.

4. History of Fiery Meteors.

5. History of Lightnings, Thunderbolts, Thunders, and Coruscations.

6. History of Winds and Sudden Blasts and Undulations of the Air.

7. History of Rainbows.

8. History of Clouds, as they are seen above.

9. History of the Blue Expanse, of Twilight, of Mock-Suns, Mock-Moons, Haloes, various colours of the Sun; and of every variety in the aspect of the heavens caused by the medium.

10. History of Showers, Ordinary, Stormy, and Prodigious; also of Waterspouts (as they are called); and the like.

11. History of Hail, Snow, Frost, Hoar-frost, Fog, Dew, and the like.

12. History of all other things that fall or descend from above, and that are generated in the upper region.

13. History of Sounds in the upper region (if there be any), besides Thunder.

14. History of Air as a whole, or in the Configuration of the World.

15. History of the Seasons or Temperatures of the Year, as well according to the variations of Regions as according to accidents of Times and Periods of Years; of Floods, Heats, Droughts, and the like.

16. History of Earth and Sea; of the Shape and Compass of them, and their Configurations compared with each other; and of their broadening or narrowing; of Islands in the Sea; of Gulfs of the Sea, and Salt Lakes within the Land; Isthmuses and Promontories.

17. History of the Motions (if any be) of the Globe of Earth and Sea; and of the Experiments from which such motions may be collected.

18. History of the greater motions and Perturbations in Earth and Sea; Earthquakes, Tremblings and Yawnings of the Earth, Islands newly appearing; Floating Islands; Breakings off of Land by entrance of the Sea, Encroachments and Inundations and contrariwise Recessions of the Sea; Eruptions of Fire from the Earth; Sudden Eruptions of Waters from the Earth; and the like.

19. Natural History of Geography; of Mountains, Vallies, Woods, Plains, Sands, Marshes, Lakes, Rivers, Torrents, Springs, and every variety of their course, and the like; leaving apart Nations, Provinces, Cities, and such like matters pertaining to Civil life.

20. History of Ebbs and Flows of the Sea; Currents, Undulations, and other Motions of the Sea.

21. History of other Accidents of the Sea; its Saltness, its various Colours, its Depth; also of Rocks, Mountains, and Vallies under the Sea, and the like.

Next come Histories of the Greater Masses 22. History of Flame and of things Ignited.

23. History of Air, in Substance, not in the Configuration of the World.

24. History of Water, in Substance, not in the Configuration of the World.

25. History of the Earth and the diversity thereof, in Substance, not in the Configuration of the World.

Next come Histories of Species

26. History of perfect Metals, Gold, Silver; and of the Mines, Veins, Marcasites of the same; also of the Working in the Mines.

27. History of Quicksilver.

28. History of Fossils; as Vitriol, Sulphur, *etc.*

29. History of Gems; as the Diamond, the Ruby, *etc.*

30. History of Stones; as Marble, Touchstone, Flint, *etc.*

31. History of the Magnet.

32. History of Miscellaneous Bodies, which are neither entirely Fossil nor Vegetable; as Salts, Amber, Ambergris, *etc.*

33. Chemical History of Metals and Minerals.

33. Chemical History of Metals and Minerals.

34. History of Plants, Trees, Shrubs, Herbs; and of their parts, Roots, Stalks, Wood, Leaves, Flowers, Fruits, Seeds, Gums, *etc.*

35. Chemical History of Vegetables.

36. History of Fishes, and the Parts and Generation of them.

37. History of Birds, and the Parts and Generation of them.

38. History of Quadrupeds, and the Parts and Generation of them.

39. History of Serpents, Worms, Flies, and other insects; and of the Parts and Generation of them.

40. Chemical History of the things which are taken by Animals.

Next come Histories of Man

41. History of the Figure and External Limbs of man, his Stature, Frame, Countenance, and Features; and of the variety of the same according to Races and Climates, or other smaller differences.

42. Physiognomical History of the same.

43. Anatomical History, or of the Internal Members of Man; and of the variety of them, as it is found in the Natural Frame and Structure, and not merely as regards Diseases and Accidents out of the course of Nature.

44. History of the parts of Uniform Structure in Man; as Flesh, Bones, Membranes, *etc.*

45. History of Humours in Man; Blood, Bile, Seed, *etc.*

46. History of Excrements; Spittle, Urine, Sweats, Stools, Hair of the Head,

Hairs of the Body, Whitlows, Nails, and the like.

47. History of Faculties; Attraction, Digestion, Retention, Expulsion, Sanguification, Assimilation of Aliment into the members, conversion of Blood and Flower of Blood into Spirit, *etc.*

48. History of Natural and Involuntary Motions; as Motion of the Heart, the Pulses, Sneezing, Lungs, Erection, *etc.*

49. History of Motions partly Natural and Partly Violent; as of Respiration, Cough, Urine, Stool, *etc.*

50. History of Voluntary Motions; as of the Instruments of Articulation of Words; Motions of the Eyes, Tongue, Jaws, Hands, Fingers; of Swallowing, *etc.*

51. History of Sleep and Dreams.

52. History of different habits of Body — Fat, Lean; of the Complexions (as they call them), *etc.*

53. History of the Generation of Man.

54. History of Conception, Vivification, Gestation in the Womb, Birth, *etc.*

55. History of the Food of Man; and of all things Eatable and Drinkable; and of all Diet; and of the variety of the same according to nations and smaller differences.

56. History of the Growth and Increase of the Body, in the whole and in its parts.

57. History of the Course of Age; Infancy, Boyhood, Youth, Old Age; of Length and Shortness of Life, and the like, according to nations and lesser differences.

58. History of Life and Death.

59. History Medicinal of Diseases, and of the Symptoms and Signs of them.

60. History Medicinal of the Treatment and Remedies and Cures of Diseases.

61. History Medicinal of those things which preserve the Body and the Health.

62. History Medicinal of those things which relate to the Form and Comeliness of the Body.

63. History Medicinal of those things which alter the Body, and pertain to Alterative Regimen.

64. History of Drugs.

65. History of Surgery.

66. Chemical History of Medicines.

67. History of Vision, and of things Visible.

68. History of Painting, Sculpture, Modelling, *etc.*

69. History of Hearing and Sound.

70. History of Music.

71. History of Smell and Smells.

72. History of Taste and Tastes.

73. History of Touch, and the objects of Touch.

74. History of Venus, as a species of Touch.

75. History of Bodily Pains, as species of Touch.

76. History of Pleasure and Pain in general.

76. History of Pleasure and Pain in general.

77. History of the Affections; as Anger, Love, Shame, *etc.*

78. History of the Intellectual Faculties; Reflexion, Imagination, Discourse, Memory, *etc.*

79. History of Natural Divinations.

80. History of Diagnostics, or Secret Natural Judgements.

81. History of Cookery, and of the arts thereto belonging, as of the Butcher, Poulterer, *etc.*

82. History of Baking, and the Making of Bread, and the arts thereto belonging, as of the Miller, *etc.*

83. History of Wine.

84. History of the Cellar and of different kinds of Drink.

85. History of Sweetmeats and Confections.

86. History of Honey.

87. History of Sugar.

88. History of the Dairy.

89. History of Baths and Ointments.

90. Miscellaneous History concerning the care of the body — as of Barbers, Perfumers, *etc.*

91. History of the working of Gold, and the arts thereto belonging.

92. History of the manufactures of Wool, and the arts thereto belonging.

92. History of the manufactures of Wool, and the arts thereto belonging.

93. History of the manufactures of Silk, and the arts thereto belonging.

94. History of the manufactures of Flax, Hemp, Cotton, Hair, and other kinds of Thread, and the arts thereto belonging.

95. History of manufactures of Feathers.

96. History of Weaving, and the arts thereto belonging.

97. History of Dyeing.

98. History of Leather-making, Tanning, and the arts thereto belonging.

99. History of Ticking and Feathers.

100. History of working in Iron.

101. History of Stone-cutting.

102. History of the making of Bricks and Tiles.

103. History of Pottery.

104. History of Cements, *etc.*

105. History of working in Wood.

106. History of working in Lead.

107. History of Glass and all vitreous substances, and of Glass-making.

108. History of Architecture generally.

109. History of Waggons, Chariots, Litters, *etc.*

110. History of Printing, of Books, of Writing, of Sealing; of Ink, Pen, Paper, Parchment, *etc.*

111. History of Wax.

112. History of Basket-making.

113. History of Mat-making, and of manufactures of Straw, Rushes, and the like.

114. History of Washing, Scouring, *etc.*

115. History of Agriculture, Pasturage, Culture of Woods, *etc.*

116. History of Gardening.

117. History of Fishing.

118. History of Hunting and Fowling.

119. History of the Art of War, and of the arts thereto belonging, as Armoury, Bow-making, Arrow-making, Musketry, Ordnance, Cross-bows, Machines, *etc.*

120. History of the Art of Navigation, and of the crafts and arts thereto belonging.

121. History of Athletics and Human Exercises of all kinds.

122. History of Horsemanship.

123. History of Games of all kinds.

124. History of Jugglers and Mountebanks.

125. Miscellaneous History of various Artificial Materials, — Enamel, Porcelain, various cements, *etc.*

126. History of Salts.

127. Miscellaneous History of various Machines and Motions.

128. Miscellaneous History of Common Experiments which have not grown into an Art.

Histories must also be written of Pure Mathematics; though they are rather observations than experiments 129. History of the Natures and Powers of Numbers.

130. History of the Natures and Powers of Figures.

The fragment containing this catalogue (*Parasceve* — Day of Preparation) was added to Bacon's work on method, *The New Logic* (*Novum Organum*), 1620. Besides completing his survey and classification of the sciences (*De Augmentis Scientiarum*), 1623, he published a few separate writings on topics in the catalogue — *Winds*, *Life and Death*, *Tides*, *etc.* In 1627, a year after his death, appeared his much misunderstood work, *Sylva Sylvarum*. He had found that the Latin word *sylva* meant *stuff* or *raw material*, as well as a *wood*, and called this final work *Sylva Sylvarum*, which I would translate, "Jungle of Raw Material." He himself referred to it as "an undigested heap of particulars"; yet he was willing it should be published because "he preferred the good of men to anything that might have relation to himself." In it, following his catalogue, he fulfilled the promise made in 1620, of putting nature and the arts to question. Some of the problems suggested for investigation are: congealing of air, turning air into water, the secret nature of flame, motion of gravity, production of cold, nourishing of young creatures in the egg or womb, prolongation of life, the media of sound, infectious diseases, accelerating and preventing putrefaction, accelerating and staying growth, producing fruit without core or seed, production of composts and helps for ground, flying in the air.

In the *New Atlantis*, a work of imagination, Bacon had represented as already achieved for mankind some of the benefits he wished for: artificial metals, various cements, excellent dyes, animals for vivisection and medical experiment, instruments which generate heat solely by motion, artificial precious stones, conveyance of sound for great distances and in tortuous lines, new explosives. "We imitate," says the guide in the Utopian land, "also flights of birds; we have some degree of flying in the air; we have ships and boats for going under water." Bacon believed in honoring the great discoverers and inventors, and advocated maintaining a calendar of inventions.

He was a fertile and stimulating thinker, and much of his great influence arose from the comprehensiveness that led to his celebrated classification of the sciences.

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PREFACE.

In preparing this sketch it is needless to say how deeply I am indebted to Mr. Spedding and Mr. Ellis, the last editors of Bacon's writings, the very able and painstaking commentators, the one on Bacon's life, the other on his philosophy. It is impossible to overstate the affectionate care and high intelligence and honesty with which Mr. Spedding has brought together and arranged the materials for an estimate of Bacon's character. In the result, in spite of the force and ingenuity of much of his pleading, I find myself most reluctantly obliged to differ from him; it seems to me to be a case where the French saying, cited by Bacon in one of his commonplace books, holds good— "*Par trop se débattre, la vérité se perd*."[1] But this does not diminish the debt of gratitude which all who are interested about Bacon must owe to Mr. Spedding. I wish also to acknowledge the assistance which I have received from Mr. Gardiner's *History of England* and Mr. Fowler's edition of the *Novum Organum*; and not least from M. de Rémusat's work on Bacon, which seems to me the most complete and the most just estimate both of Bacon's character and work which has yet appeared; though even in this clear and dispassionate survey we are reminded by some misconceptions, strange in M. de Rémusat, how what one nation takes for granted is incomprehensible to its neighbour; and what a gap there is still, even in matters of philosophy and literature, between the whole Continent and ourselves — "Penitus toto divisos orbe Britannos."

CHAPTER I.

EARLY LIFE.

The life of Francis Bacon is one which it is a pain to write or to read. It is the life of a man endowed with as rare a combination of noble gifts as ever was bestowed on a human intellect; the life of one with whom the whole purpose of living and of every day's work was to do great things to enlighten and elevate his race, to enrich it with new powers, to lay up in store for all ages to come a source of blessings which should never fail or dry up; it was the life of a man who had high thoughts of the ends and methods of law and government, and with whom the general and public good was regarded as the standard by which the use of public power was to be measured; the life of a man who had struggled hard and successfully for the material prosperity and opulence which makes work easy and gives a man room and force for carrying out his purposes. All his life long his first and never-sleeping passion was the romantic and splendid ambition after knowledge, for the conquest of nature and for the service of man; gathering up in himself the spirit and longings and efforts of all discoverers and inventors of the arts, as they are symbolised in the mythical Prometheus. He rose to the highest place and honour; and yet that place and honour were but the fringe and adornment of all that made him great. It is difficult to imagine a grander and more magnificent career; and his name ranks among the few chosen examples of human achievement. And yet it was not only an unhappy life; it was a poor life. We expect that such an overwhelming weight of glory should be borne up by a character corresponding to it in strength and nobleness. But that is not what we find. No one ever had a greater idea of what he was made for, or was fired with a greater desire to devote himself to it. He was all this. And yet being all this, seeing deep into man's worth, his capacities, his greatness, his weakness, his sins, he was not true to what he knew. He cringed to such a man as Buckingham. He sold himself to the corrupt and ignominious Government of

James I. He was willing to be employed to hunt to death a friend like Essex, guilty, deeply guilty, to the State, but to Bacon the most loving and generous of benefactors. With his eyes open he gave himself up without resistance to a system unworthy of him; he would not see what was evil in it, and chose to call its evil good; and he was its first and most signal victim.

Bacon has been judged with merciless severity. But he has also been defended by an advocate whose name alone is almost a guarantee for the justness of the cause which he takes up, and the innocency of the client for whom he argues. Mr. Spedding devoted nearly a lifetime, and all the resources of a fine intellect and an earnest conviction, to make us revere as well as admire Bacon. But it is vain. It is vain to fight against the facts of his life: his words, his letters. "Men are made up," says a keen observer, "of professions, gifts, and talents; and also of *themselves*."[2] With all his greatness, his splendid genius, his magnificent ideas, his enthusiasm for truth, his passion to be the benefactor of his kind; with all the charm that made him loved by good and worthy friends, amiable, courteous, patient, delightful as a companion, ready to take any trouble — there was in Bacon's "self" a deep and fatal flaw. He was a pleaser of men. There was in him that subtle fault, noted and named both by philosophy and religion in the ἄρεσκος of Aristotle, the ἀνθρωπάρεσκος of St. Paul, which is more common than it is pleasant to think, even in good people, but which if it becomes dominant in a character is ruinous to truth and power. He was one of the men — there are many of them — who are unable to release their imagination from the impression of present and immediate power, face to face with themselves. It seems as if he carried into conduct the leading rule of his philosophy of nature, *parendo vincitur*. In both worlds, moral and physical, he felt himself encompassed by vast forces, irresistible by direct opposition. Men whom he wanted to bring round to his purposes were as strange, as refractory, as obstinate, as impenetrable as the phenomena of the natural world. It was no use attacking in front, and by a direct trial of strength, people like Elizabeth or Cecil or James; he might as well think of forcing some natural power in defiance of natural law. The first word of his teaching about nature is that she must be won

by observation of her tendencies and demands; the same radical disposition of temper reveals itself in his dealings with men: they, too, must be won by yielding to them, by adapting himself to their moods and ends; by spying into the drift of their humour, by subtly and pliantly falling in with it, by circuitous and indirect processes, the fruit of vigilance and patient thought. He thought to direct, while submitting apparently to be directed. But he mistook his strength. Nature and man are different powers, and under different laws. He chose to please man, and not to follow what his soul must have told him was the better way. He wanted, in his dealings with men, that sincerity on which he insisted so strongly in his dealings with nature and knowledge. And the ruin of a great life was the consequence.

Francis Bacon was born in London on the 22d of January, 1560/61, three years before Galileo. He was born at York House, in the Strand; the house which, though it belonged to the Archbishops of York, had been lately tenanted by Lord Keepers and Lord Chancellors, in which Bacon himself afterwards lived as Lord Chancellor, and which passed after his fall into the hands of the Duke of Buckingham, who has left his mark in the Water Gate which is now seen, far from the river, in the garden of the Thames Embankment. His father was Sir Nicholas Bacon, Elizabeth's first Lord Keeper, the fragment of whose effigy in the Crypt of St. Paul's is one of the few relics of the old Cathedral before the fire. His uncle by marriage was that William Cecil who was to be Lord Burghley. His mother, the sister of Lady Cecil, was one of the daughters of Sir Antony Cook, a person deep in the confidence of the reforming party, who had been tutor of Edward VI. She was a remarkable woman, highly accomplished after the fashion of the ladies of her party, and as would become her father's daughter and the austere and laborious family to which she belonged. She was "exquisitely skilled in the Greek and Latin tongues;" she was passionately religious, according to the uncompromising religion which the exiles had brought back with them from Geneva, Strasburg, and Zurich, and which saw in Calvin's theology a solution of all the difficulties, and in his discipline a remedy for all the evils, of mankind. This means that his boyhood from the first was

passed among the high places of the world — at one of the greatest crises of English history — in the very centre and focus of its agitations. He was brought up among the chiefs and leaders of the rising religion, in the houses of the greatest and most powerful persons of the State, and naturally, as their child, at times in the Court of the Queen, who joked with him, and called him "her young Lord Keeper." It means also that the religious atmosphere in which he was brought up was that of the nascent and aggressive Puritanism, which was not satisfied with the compromises of the Elizabethan Reformation, and which saw in the moral poverty and incapacity of many of its chiefs a proof against the great traditional system of the Church which Elizabeth was loath to part with, and which, in spite of all its present and inevitable shortcomings, her political sagacity taught her to reverence and trust.

At the age of twelve he was sent to Cambridge, and put under Whitgift at Trinity. It is a question which recurs continually to readers about those times and their precocious boys, what boys were then? For whatever was the learning of the universities, these boys took their place with men and consorted with them, sharing such knowledge as men had, and performing exercises and hearing lectures according to the standard of men. Grotius at eleven was the pupil and companion of Scaliger and the learned band of Leyden; at fourteen he was part of the company which went with the ambassadors of the States-General to Henry IV.; at sixteen he was called to the bar, he published an out-of-the-way Latin writer, Martianus Capella, with a learned commentary, and he was the correspondent of De Thou. When Bacon was hardly sixteen he was admitted to the Society of "Ancients" of Gray's Inn, and he went in the household of Sir Amyas Paulet, the Queen's Ambassador, to France. He thus spent two years in France, not in Paris alone, but at Blois, Tours, and Poitiers. If this was precocious, there is no indication that it was thought precocious. It only meant that clever and promising boys were earlier associated with men in important business than is customary now. The old and the young heads began to work together sooner. Perhaps they felt that there was less time to spare. In spite of

instances of longevity, life was shorter for the average of busy men, for the conditions of life were worse.

Two recollections only have been preserved of his early years. One is that, as he told his chaplain, Dr. Rawley, late in life, he had discovered, as far back as his Cambridge days, the "unfruitfulness" of Aristotle's method. It is easy to make too much of this. It is not uncommon for undergraduates to criticise their text-books; it was the fashion with clever men, as, for instance, Montaigne, to talk against Aristotle without knowing anything about him; it is not uncommon for men who have worked out a great idea to find traces of it, on precarious grounds, in their boyish thinking. Still, it is worth noting that Bacon himself believed that his fundamental quarrel with Aristotle had begun with the first efforts of thought, and that this is the one recollection remaining of his early tendency in speculation. The other is more trustworthy, and exhibits that inventiveness which was characteristic of his mind. He tells us in the *De Augmentis* that when he was in France he occupied himself with devising an improved system of cypher-writing — a thing of daily and indispensable use for rival statesmen and rival intriguers. But the investigation, with its call on the calculating and combining faculties, would also interest him, as an example of the discovery of new powers by the human mind.

In the beginning of 1579 Bacon, at eighteen, was called home by his father's death. This was a great blow to his prospects. His father had not accomplished what he had intended for him, and Francis Bacon was left with only a younger son's "narrow portion." What was worse, he lost one whose credit would have served him in high places. He entered on life, not as he might have expected, independent and with court favour on his side, but with his very livelihood to gain — a competitor at the bottom of the ladder for patronage and countenance. This great change in his fortunes told very unfavourably on his happiness, his usefulness, and, it must be added, on his character. He accepted it, indeed, manfully, and at once threw himself into the study of the law as the profession by which he was to live. But the law, though it was the only path open to him, was not the one which suited his genius, or his object in life. To the last he

worked hard and faithfully, but with doubtful reputation as to his success, and certainly against the grain. And this was not the worst. To make up for the loss of that start in life of which his father's untimely death had deprived him, he became, for almost the rest of his life, the most importunate and most untiring of suitors.

In 1579 or 1580 Bacon took up his abode at Gray's Inn, which for a long time was his home. He went through the various steps of his profession. He began, what he never discontinued, his earnest and humble appeals to his relative the great Lord Burghley, to employ him in the Queen's service, or to put him in some place of independence: through Lord Burghley's favour he seems to have been pushed on at his Inn, where, in 1586, he was a Bencher; and in 1584 he came into Parliament for Melcombe Regis. He took some small part in Parliament; but the only record of his speeches is contained in a surly note of Recorder Fleetwood, who writes as an old member might do of a young one talking nonsense. He sat again for Liverpool in the year of the Armada (1588), and his name begins to appear in the proceedings. These early years, we know, were busy ones. In them Bacon laid the foundation of his observations and judgments on men and affairs; and in them the great purpose and work of his life was conceived and shaped. But they are more obscure years than might have been expected in the case of a man of Bacon's genius and family, and of such eager and unconcealed desire to rise and be at work. No doubt he was often pinched in his means; his health was weak, and he was delicate and fastidious in his care of it. Plunged in work, he lived very much as a recluse in his chambers, and was thought to be reserved, and what those who disliked him called arrogant. But Bacon was ambitious — ambitious, in the first place, of the Queen's notice and favour. He was versatile, brilliant, courtly, besides being his father's son; and considering how rapidly bold and brilliant men were able to push their way and take the Queen's favour by storm, it seems strange that Bacon should have remained fixedly in the shade. Something must have kept him back. Burghley was not the man to neglect a useful instrument with such good will to serve him. But all that Mr. Spedding's industry and profound

interest in the subject has brought together throws but an uncertain light on Bacon's long disappointment. Was it the rooted misgiving of a man of affairs like Burghley at that passionate contempt of all existing knowledge, and that undoubting confidence in his own power to make men know, as they never had known, which Bacon was even now professing? Or was it something soft and over-obsequious in character which made the uncle, who knew well what men he wanted, disinclined to encourage and employ the nephew? Was Francis not hard enough, not narrow enough, too full of ideas, too much alive to the shakiness of current doctrines and arguments on religion and policy? Was he too open to new impressions, made by objections or rival views? Or did he show signs of wanting backbone to stand amid difficulties and threatening prospects? Did Burghley see something in him of the pliability which he could remember as the serviceable quality of his own young days — which suited those days of rapid change, but not days when change was supposed to be over, and when the qualities which were wanted were those which resist and defy it? The only thing that is clear is that Burghley, in spite of Bacon's continual applications, abstained to the last from advancing his fortunes.

Whether employed by government or not, Bacon began at this time to prepare those carefully-written papers on the public affairs of the day, of which he has left a good many. In our day they would have been pamphlets or magazine articles. In his they were circulated in manuscript, and only occasionally printed. The first of any importance is a letter of advice to the Queen, about the year 1585, on the policy to be followed with a view to keeping in check the Roman Catholic interest at home and abroad. It is calm, sagacious, and, according to the fashion of the age, slightly Machiavellian. But the first subject on which Bacon exhibited his characteristic qualities, his appreciation of facts, his balance of thought, and his power, when not personally committed, of standing aloof from the ordinary prejudices and assumptions of men round him, was the religious condition and prospects of the English Church. Bacon had been brought up in a Puritan household of the straitest sect. His mother was an earnest, severe, and intolerant Calvinist, deep in the interests and cause of her party, bitterly

resenting all attempts to keep in order its pretensions. She was a masterful woman, claiming to meddle with her brother-in-law's policy, and though a most affectionate mother she was a woman of violent and ungovernable temper. Her letters to her son Antony, whom she loved passionately, but whom she suspected of keeping dangerous and papistical company, show us the imperious spirit in which she claimed to interfere with her sons; and they show also that in Francis she did not find all the deference which she looked for. Recommending Antony to frequent "the religious exercises of the sincerer sort," she warns him not to follow his brother's advice or example. Antony was advised to use prayer twice a day with his servants. "Your brother," she adds, "is too negligent therein." She is anxious about Antony's health, and warns him not to fall into his brother's ill-ordered habits: "I verily think your brother's weak stomach to digest hath been much caused and confirmed by untimely going to bed, and then musing *nescio quid* when he should sleep, and then in consequent by late rising and long lying in bed, whereby his men are made slothful and himself continueth sickly. But my sons haste not to hearken to their mother's good counsel in time to prevent." It seems clear that Francis Bacon had shown his mother that not only in the care of his health, but in his judgment on religious matters, he meant to go his own way. Mr. Spedding thinks that she must have had much influence on him; it seems more likely that he resented her interference, and that the hard and narrow arrogance which she read into the Gospel produced in him a strong reaction. Bacon was obsequious to the tyranny of power, but he was never inclined to bow to the tyranny of opinion; and the tyranny of Puritan infallibility was the last thing to which he was likely to submit. His mother would have wished him to sit under Cartwright and Travers. The friend of his choice was the Anglican preacher, Dr. Andrewes, to whom he submitted all his works, and whom he called his "inquisitor general;" and he was proud to sign himself the pupil of Whitgift, and to write for him — the archbishop of whom Lady Bacon wrote to her son Antony, veiling the dangerous sentiment in Greek, "that he was the ruin of the Church, for he loved his own glory more than Christ's."

Certainly, in the remarkable paper on *Controversies in the Church* (1589), Bacon had ceased to feel or to speak as a Puritan. The paper is an attempt to compose the controversy by pointing out the mistakes in judgment, in temper, and in method on both sides. It is entirely unlike what a Puritan would have written: it is too moderate, too tolerant, too neutral, though like most essays of conciliation it is open to the rejoinder from both sides — certainly from the Puritan — that it begs the question by assuming the unimportance of the matters about which each contended with so much zeal. It is the confirmation, but also the complement, and in some ways the correction of Hooker's contemporary view of the quarrel which was threatening the life of the English Church, and not even Hooker could be so comprehensive and so fair. For Hooker had to defend much that was indefensible: he had to defend a great traditional system, just convulsed by a most tremendous shock — a shock and alteration, as Bacon says, "the greatest and most dangerous that can be in a State," in which old clews and habits and rules were confused and all but lost; in which a frightful amount of personal incapacity and worthlessness had, from sheer want of men, risen to the high places of the Church; and in which force and violence, sometimes of the most hateful kind, had come to be accepted as ordinary instruments in the government of souls. Hooker felt too strongly the unfairness, the folly, the intolerant aggressiveness, the malignity of his opponents — he was too much alive to the wrongs inflicted by them on his own side, and to the incredible absurdity of their arguments — to do justice to what was only too real in the charges and complaints of those opponents. But Bacon came from the very heart of the Puritan camp. He had seen the inside of Puritanism — its best as well as its worst side. He witnesses to the humility, the conscientiousness, the labour, the learning, the hatred of sin and wrong, of many of its preachers. He had heard, and heard with sympathy, all that could be urged against the bishops' administration, and against a system of legal oppression in the name of the Church. Where religious elements were so confusedly mixed, and where each side had apparently so much to urge on behalf of its claims, he saw the deep mistake of loftily ignoring facts, and of want of patience and forbearance with

those who were scandalised at abuses, while the abuses, in some cases monstrous, were tolerated and turned to profit. Towards the bishops and their policy, though his language is very respectful, for the government was implicated, he is very severe. They punish and restrain, but they do not themselves mend their ways or supply what was wanting; and theirs are "*injuriæ potentiorum*"— "injuries come from them that have the upperhand." But Hooker himself did not put his finger more truly and more surely on the real mischief of the Puritan movement: on the immense outbreak in it of unreasonable party spirit and visible personal ambition— "these are the true successors of Diotrephes and not my lord bishops" — on the gradual development of the Puritan theory till it came at last to claim a supremacy as unquestionable and intolerant as that of the Papacy; on the servile affectation of the fashions of Geneva and Strasburg; on the poverty and foolishness of much of the Puritan teaching — its inability to satisfy the great questions which it raised in the soul, its unworthy dealing with Scripture— "naked examples, conceited inferences, and forced allusions, which mine into all certainty of religion"— "the word, the bread of life, they toss up and down, they break it not;" on their undervaluing of moral worth, if it did not speak in their phraseology— "as they censure virtuous men by the names of *civil* and *moral*, so do they censure men truly and godly wise, who see into the vanity of their assertions, by the name of *politiques*, saying that their wisdom is but carnal and savouring of man's brain." Bacon saw that the Puritans were aiming at a tyranny which, if they established it, would be more comprehensive, more searching, and more cruel than that of the older systems; but he thought it a remote and improbable danger, and that they might safely be tolerated for the work they did in education and preaching, "because the work of exhortation doth chiefly rest upon these men, and they have a zeal and hate of sin." But he ends by warning them lest "that be true which one of their adversaries said, *that they have but two small wants — knowledge and love*." One complaint that he makes of them is a curious instance of the changes of feeling, or at least of language, on moral subjects. He accuses them of "having pronounced generally, and without difference, all untruths unlawful," forgetful of the Egyptian midwives, and

Rahab, and Solomon, and even of Him "who, the more to touch the hearts of the disciples with a holy dalliance, made as though he would have passed Emmaus." He is thinking of their failure to apply a principle which was characteristic of his mode of thought, that even a statement about a virtue like veracity "hath limit as all things else have;" but it is odd to find Bacon bringing against the Puritans the converse of the charge which his age, and Pascal afterwards, brought against the Jesuits. The essay, besides being a picture of the times as regards religion, is an example of what was to be Bacon's characteristic strength and weakness: his strength in lifting up a subject which had been degraded by mean and wrangling disputations, into a higher and larger light, and bringing to bear on it great principles and the results of the best human wisdom and experience, expressed in weighty and pregnant maxims; his weakness in forgetting, as, in spite of his philosophy, he so often did, that the grandest major premises need well-proved and ascertained minors, and that the enunciation of a principle is not the same thing as the application of it. Doubtless there is truth in his closing words; but each party would have made the comment that what he had to prove, and had not proved, was that by following his counsel they would "love the whole world better than a part."

"Let them not fear ... the fond calumny of *neutrality*; but let them know that is true which is said by a wise man, *that neuters in contentions are either better or worse than either side*. These things have I in all sincerity and simplicity set down touching the controversies which now trouble the Church of England; and that without all art and insinuation, and therefore not like to be grateful to either part. Notwithstanding, I trust what has been said shall find a correspondence in their minds which are not embarked in partiality, and which *love the whole letter than a part*"

Up to this time, though Bacon had showed himself capable of taking a broad and calm view of questions which it was the fashion among good men, and men who were in possession of the popular ear, to treat with narrowness and heat, there was nothing to disclose his deeper thoughts — nothing foreshadowed the purpose which was to fill his life. He had, indeed, at the age of twenty-five,

written a "youthful" philosophical essay, to which he gave the pompous title "*Temporis Partus Maximus*," "the Greatest Birth of Time." But he was thirty-one when we first find an indication of the great idea and the great projects which were to make his name famous. This indication is contained in an earnest appeal to Lord Burghley for some help which should not be illusory. Its words are distinct and far-reaching, and they are the first words from him which tell us what was in his heart. The letter has the interest to us of the first announcement of a promise which, to ordinary minds, must have appeared visionary and extravagant, but which was so splendidly fulfilled; the first distant sight of that sea of knowledge which henceforth was opened to mankind, but on which no man, as he thought, had yet entered. It contains the famous avowal— "*I have taken all knowledge to be my province*" — made in the confidence born of long and silent meditations and questionings, but made in a simple good faith which is as far as possible from vain boastfulness.

"MY LORD, — With as much confidence as mine own honest and faithful devotion unto your service and your honourable correspondence unto me and my poor estate can breed in a man, do I commend myself unto your Lordship. I wax now somewhat ancient: one and thirty years is a great deal of sand in the hour glass. My health, I thank God, I find confirmed; and I do not fear that action shall impair it, because I account my ordinary course of study and meditation to be more painful than most parts of action are. I ever bare a mind (in some middle place that I could discharge) to serve her Majesty, not as a man born under Sol, that loveth honour, nor under Jupiter, that loveth business (for the contemplative planet carrieth me away wholly), but as a man born under an excellent sovereign that deserveth the dedication of all men's abilities. Besides, I do not find in myself so much self-love, but that the greater parts of my thoughts are to deserve well (if I be able) of my friends, and namely of your Lordship; who, being the Atlas of this commonwealth, the honour of my house, and the second founder of my poor estate, I am tied by all duties, both of a good patriot, and of an unworthy kinsman, and of an obliged servant, to employ whatsoever I am to do you service. Again, the meanness of my estate doth somewhat move me; for

though I cannot accuse myself that I am either prodigal or slothful, yet my health is not to spend, nor my course to get. Lastly, I confess that I have as vast contemplative ends as I have moderate civil ends; for I have taken all knowledge to be my province; and if I could purge it of two sorts of rovers, whereof the one with frivolous disputations, confutations, and verbosities, the other with blind experiments and auricular traditions and impostures, hath committed so many spoils, I hope I should bring in industrious observations, grounded conclusions, and profitable inventions and discoveries: the best state of that province. This, whether it be curiosity or vain glory, or nature, or (if one take it favourably) *philanthropia*, is so fixed in my mind as it cannot be removed. And I do easily see, that place of any reasonable countenance doth bring commandment of more wits than of a man's own; which is the thing I greatly affect. And for your Lordship, perhaps you shall not find more strength and less encounter in any other. And if your Lordship shall find now, or at any time, that I do seek or affect any place whereunto any that is nearer unto your Lordship shall be concurrent, say then that I am a most dishonest man. And if your Lordship will not carry me on, I will not do as Anaxagoras did, who reduced himself with contemplation unto voluntary poverty, but this I will do — I will sell the inheritance I have, and purchase some lease of quick revenue, or some office of gain that shall be executed by deputy, and so give over all care of service, and become some sorry book-maker, or a true pioneer in that mine of truth which (he said) lay so deep. This which I have writ unto your Lordship is rather thoughts than words, being set down without all art, disguising, or reservation. Wherein I have done honour both to your Lordship's wisdom, in judging that that will be best believed of your Lordship which is truest, and to your Lordship's good nature, in retaining nothing from you. And even so I wish your Lordship all happiness, and to myself means and occasions to be added to my faithful desire to do you service. From my lodgings at Gray's Inn."

This letter to his unsympathetic and suspicious, but probably not unfriendly relative, is the key to Bacon's plan of life; which, with numberless changes of form, he followed to the end. That is, a profession, steadily, seriously, and

laboriously kept to, in order to provide the means of living; and beyond that, as the ultimate and real end of his life, the pursuit, in a way unattempted before, of all possible human knowledge, and of the methods to improve it and make it sure and fruitful. And so his life was carried out. On the one hand it was a continual and pertinacious seeking after government employment, which could give credit to his name and put money in his pocket — attempts by general behaviour, by professional services when the occasion offered, by putting his original and fertile pen at the service of the government, to win confidence, and to overcome the manifest indisposition of those in power to think that a man who cherished the chimera of universal knowledge could be a useful public servant. On the other hand, all the while, in the crises of his disappointment or triumph, the one great subject lay next his heart, filling him with fire and passion — how really to know, and to teach men to know indeed, and to use their knowledge so as to command nature; the great hope to be the reformer and restorer of knowledge in a more wonderful sense than the world had yet seen in the reformation of learning and religion, and in the spread of civilised order in the great states of the Renaissance time. To this he gave his best and deepest thoughts; for this he was for ever accumulating, and for ever rearranging and reshaping those masses of observation and inquiry and invention and mental criticism which were to come in as parts of the great design which he had seen in the visions of his imagination, and of which at last he was only able to leave noble fragments, incomplete after numberless recastings. This was not indeed the only, but it was the predominant and governing, interest of his life. Whether as solicitor for Court favour or public office; whether drudging at the work of the law or managing State prosecutions; whether writing an opportune pamphlet against Spain or Father Parsons, or inventing a “device” for his Inn or for Lord Essex to give amusement to Queen Elizabeth; whether fulfilling his duties as member of Parliament or rising step by step to the highest places in the Council Board and the State; whether in the pride of success or under the amazement of unexpected and irreparable overthrow, while it seemed as if he was only measuring his strength against the rival ambitions of the day, in the same spirit

and with the same object as his competitors, the true motive of all his eagerness and all his labours was not theirs. He wanted to be powerful, and still more to be rich; but he wanted to be so, because without power and without money he could not follow what was to him the only thing worth following on earth — a real knowledge of the amazing and hitherto almost unknown world in which he had to live. Bacon, to us, at least, at this distance, who can only judge him from partial and imperfect knowledge, often seems to fall far short of what a man should be. He was not one of the high-minded and proud searchers after knowledge and truth, like Descartes, who were content to accept a frugal independence so that their time and their thoughts might be their own. Bacon was a man of the world, and wished to live in and with the world. He threatened sometimes retirement, but never with any very serious intention. In the Court was his element, and there were his hopes. Often there seems little to distinguish him from the ordinary place-hunters, obsequious and selfish, of every age; little to distinguish him from the servile and insincere flatterers, of whom he himself complains, who crowded the antechambers of the great Queen, content to submit with smiling face and thankful words to the insolence of her waywardness and temper, in the hope, more often disappointed than not, of hitting her taste on some lucky occasion, and being rewarded for the accident by a place of gain or honour. Bacon's history, as read in his letters, is not an agreeable one; after every allowance made for the fashions of language and the necessities of a suitor, there is too much of insincere profession of disinterestedness, too much of exaggerated profession of admiration and devoted service, too much of disparagement and insinuation against others, for a man who respected himself. He submitted too much to the miserable conditions of rising which he found. But, nevertheless, it must be said that it was for no mean object, for no mere private selfishness or vanity, that he endured all this. He strove hard to be a great man and a rich man. But it was that he might have his hands free and strong and well furnished to carry forward the double task of overthrowing ignorance and building up the new and solid knowledge on which his heart was set — that

immense conquest of nature on behalf of man which he believed to be possible, and of which he believed himself to have the key.

The letter to Lord Burghley did not help him much. He received the reversion of a place, the Clerkship of the Council, which did not become vacant for twenty years. But these years of service declined and place withheld were busy and useful ones. What he was most intent upon, and what occupied his deepest and most serious thought, was unknown to the world round him, and probably not very intelligible to his few intimate friends, such as his brother Antony and Dr. Andrewes. Meanwhile he placed his pen at the disposal of the authorities, and though they regarded him more as a man of study than of practice and experience, they were glad to make use of it. His versatile genius found another employment. Besides his affluence in topics, he had the liveliest fancy and most active imagination. But that he wanted the sense of poetic fitness and melody, he might almost be supposed, with his reach and play of thought, to have been capable, as is maintained in some eccentric modern theories, of writing Shakespeare's plays. No man ever had a more imaginative power of illustration drawn from the most remote and most unlikely analogies; analogies often of the quaintest and most unexpected kind, but often also not only felicitous in application but profound and true. His powers were early called upon for some of those sportive compositions in which that age delighted on occasions of rejoicing or festival. Three of his contributions to these "devices" have been preserved — two of them composed in honour of the Queen, as "triumphs," offered by Lord Essex, one probably in 1592 and another in 1595; a third for a Gray's Inn revel in 1594. The "devices" themselves were of the common type of the time, extravagant, odd, full of awkward allegory and absurd flattery, and running to a prolixity which must make modern lovers of amusement wonder at the patience of those days; but the "discourses" furnished by Bacon are full of fine observation and brilliant thought and wit and happy illustration, which, fantastic as the general conception is, raises them far above the level of such fugitive trifles.

Among the fragmentary papers belonging to this time which have come down, not the least curious are those which throw light on his manner of working. While he was following out the great ideas which were to be the basis of his philosophy, he was as busy and as painstaking in fashioning the instruments by which they were to be expressed; and in these papers we have the records and specimens of this preparation. He was a great collector of sentences, proverbs, quotations, sayings, illustrations, anecdotes, and he seems to have read sometimes simply to gather phrases and apt words. He jots down at random any good and pointed remark which comes into his thought or his memory; at another time he groups a set of stock quotations with a special drift, bearing on some subject, such as the faults of universities or the habits of lawyers. Nothing is too minute for his notice. He brings together in great profusion mere forms, varied turns of expression, heads and tails of clauses and paragraphs, transitions, connections; he notes down fashions of compliment, of excuse or repartee, even morning and evening salutations; he records neat and convenient opening and concluding sentences, ways of speaking more adapted than others to give a special colour or direction to what the speaker or writer has to say — all that hook-and-eye work which seems so trivial and passes so unnoticed as a matter of course, and which yet is often hard to reach, and which makes all the difference between tameness and liveliness, between clearness and obscurity — all the difference, not merely to the ease and naturalness, but often to the logical force of speech. These collections it was his way to sift and transcribe again and again, adding as well as omitting. From one of these, belonging to 1594 and the following years, the *Promus of Formularies and Elegancies*, Mr. Spedding has given curious extracts; and the whole collection has been recently edited by Mrs. Henry Pott. Thus it was that he prepared himself for what, as we read it, or as his audience heard it, seems the suggestion or recollection of the moment. Bacon was always much more careful of the value or aptness of a thought than of its appearing new and original. Of all great writers he least minds repeating himself, perhaps in the very same words; so that a simile, an illustration, a quotation pleases him, he returns to it — he is never tired of it; it obviously gives him

satisfaction to introduce it again and again. These collections of odds and ends illustrate another point in his literary habits. His was a mind keenly sensitive to all analogies and affinities, impatient of a strict and rigid logical groove, but spreading as it were tentacles on all sides in quest of chance prey, and quickened into a whole system of imagination by the electric quiver imparted by a single word, at once the key and symbol of the thinking it had led to. And so he puts down word or phrase, so enigmatical to us who see it by itself, which to him would wake up a whole train of ideas, as he remembered the occasion of it — how at a certain time and place this word set the whole moving, seemed to breathe new life and shed new light, and has remained the token, meaningless in itself, which reminds him of so much.

When we come to read his letters, his speeches, his works, we come continually on the results and proofs of this early labour. Some of the most memorable and familiar passages of his writings are to be traced from the storehouses which he filled in these years of preparation. An example of this correspondence between the note-book and the composition is to be seen in a paper belonging to this period, written apparently to form part of a masque, or as he himself calls it, a "Conference of Pleasure," and entitled the *Praise of Knowledge*. It is interesting because it is the first draught which we have from him of some of the leading ideas and most characteristic language about the defects and the improvement of knowledge, which were afterwards embodied in the *Advancement* and the *Novum Organum*. The whole spirit and aim of his great reform is summed up in the following fine passage: "Facility to believe, impatience to doubt, temerity to assever, glory to know, doubt to contradict, end to gain, sloth to search, seeking things in words, resting in a part of nature — these and the like have been the things which have forbidden the happy match between the mind of man and the nature of things, and in place thereof have married it to vain notions and blind experiments.... Therefore, no doubt, the *sovereignty of man* lieth hid in knowledge; wherein many things are reserved which kings with their treasures cannot buy nor with their force command; their spials and intelligencers can give no news of them; their seamen and discoverers

cannot sail where they grow. Now we govern nature in opinions, but we are thrall unto her in necessity; but if we could be led by her in invention, we should command her in action."

To the same occasion as the discourse on the *Praise of Knowledge* belongs, also, one in *Praise of the Queen*. As one is an early specimen of his manner of writing on philosophy, so this is a specimen of what was equally characteristic of him — his political and historical writing. It is, in form, necessarily a panegyric, as high-flown and adulatory as such performances in those days were bound to be. But it is not only flattery. It fixes with true discrimination on the points in Elizabeth's character and reign which were really subjects of admiration and homage. Thus of her unquailing spirit at the time of the Spanish invasion — "Lastly, see a Queen, that when her realm was to have been invaded by an army, the preparation whereof was like the travail of an elephant, the provisions infinite, the setting forth whereof was the terror and wonder of Europe; it was not seen that her cheer, her fashion, her ordinary manner was anything altered; not a cloud of that storm did appear in that countenance wherein peace doth ever shine; but with excellent assurance and advised security she inspired her council, animated her nobility, redoubled the courage of her people; still having this noble apprehension, not only that she would communicate her fortune with them, but that it was she that would protect them, and not they her; which she testified by no less demonstration than her presence in camp. Therefore that magnanimity that neither feareth greatness of alteration, nor the vows of conspirators, nor the power of the enemy, is more than heroical."

These papers, though he put his best workmanship into them, as he invariably did with whatever he touched, were of an ornamental kind. But he did more serious work. In the year 1592 a pamphlet had been published on the Continent in Latin and English, *Responsio ad Edictum Reginæ Angliæ*, with reference to the severe legislation which followed on the Armada, making such charges against the Queen and the Government as it was natural for the Roman Catholic party to make, and making them with the utmost virulence and unscrupulousness. It was supposed to be written by the ablest of the Roman

pamphleteers, Father Parsons. The Government felt it to be a dangerous indictment, and Bacon was chosen to write the answer to it. He had additional interest in the matter, for the pamphlet made a special and bitter attack on Burghley, as the person mainly responsible for the Queen's policy. Bacon's reply is long and elaborate, taking up every charge, and reviewing from his own point of view the whole course of the struggle between the Queen and the supporters of the Roman Catholic interest abroad and at home. It cannot be considered an impartial review; besides that it was written to order, no man in England could then write impartially in that quarrel; but it is not more one-sided and uncandid than the pamphlet which it answers, and Bacon is able to recriminate with effect, and to show gross credulity and looseness of assertion on the part of the Roman Catholic advocate. But religion had too much to do with the politics of both sides for either to be able to come into the dispute with clean hands: the Roman Catholics meant much more than toleration, and the sanguinary punishments of the English law against priests and Jesuits were edged by something even keener than the fear of treason. But the paper contains some large surveys of public affairs, which probably no one at that time could write but Bacon. Bacon never liked to waste anything good which he had written; and much of what he had written in the panegyric in *Praise of the Queen* is made use of again, and transferred with little change to the pages of the *Observations on a Libel*.

CHAPTER II.

BACON AND ELIZABETH.

The last decade of the century, and almost of Elizabeth's reign (1590-1600), was an eventful one to Bacon's fortunes. In it the vision of his great design disclosed itself more and more to his imagination and hopes, and with more and more irresistible fascination. In it he made his first literary venture, the first edition of his *Essays* (1597), ten in number, the first-fruits of his early and ever watchful observation of men and affairs. These years, too, saw his first steps in public life, the first efforts to bring him into importance, the first great trials and tests of his character. They saw the beginning and they saw the end of his relations with the only friend who, at that time, recognised his genius and his purposes, certainly the only friend who ever pushed his claims; they saw the growth of a friendship which was to have so tragical a close, and they saw the beginnings and causes of a bitter personal rivalry which was to last through life, and which was to be a potent element hereafter in Bacon's ruin. The friend was the Earl of Essex. The competitor was the ablest, and also the most truculent and unscrupulous of English lawyers, Edward Coke.

While Bacon, in the shade, had been laying the foundations of his philosophy of nature, and vainly suing for legal or political employment, another man had been steadily rising in the Queen's favour and carrying all before him at Court — Robert Devereux, Lord Essex; and with Essex Bacon had formed an acquaintance which had ripened into an intimate and affectionate friendship. We commonly think of Essex as a vain and insolent favourite, who did ill the greatest work given him to do — the reduction of Ireland; who did it ill from some unexplained reason of spite and mischief; and who, when called to account for it, broke out into senseless and idle rebellion. This was the end. But he was not always thus. He began life with great gifts and noble ends; he was a serious, modest, and large-minded student both of books and things, and he turned his

studies to full account. He had imagination and love of enterprise, which gave him an insight into Bacon's ideas such as none of Bacon's contemporaries had. He was a man of simple and earnest religion; he sympathized most with the Puritans, because they were serious and because they were hardly used. Those who most condemn him acknowledge his nobleness and generosity of nature. Bacon in after days, when all was over between them, spoke of him as a man always *patientissimus veri*; "the more plainly and frankly you shall deal with my lord," he writes elsewhere, "not only in disclosing particulars, but in giving him *caveats* and admonishing him of any error which in this action he may commit (such is his lordship's nature), the better he will take it." "He must have seemed," says Mr. Spedding, a little too grandly, "in the eyes of Bacon like the hope of the world." The two men, certainly, became warmly attached. Their friendship came to be one of the closest kind, full of mutual services, and of genuine affection on both sides. It was not the relation of a great patron and useful dependant; it was, what might be expected in the two men, that of affectionate equality. Each man was equally capable of seeing what the other was, and saw it. What Essex's feelings were towards Bacon the results showed. Bacon, in after years, repeatedly claimed to have devoted his whole time and labour to Essex's service. Holding him, he says, to be "the fittest instrument to do good to the State, I applied myself to him in a manner which I think rarely happeneth among men; neglecting the Queen's service, mine own fortune, and, in a sort, my vocation, I did nothing but advise and ruminate with myself ... anything that might concern his lordship's honour, fortune, or service." The claim is far too wide. The "Queen's service" had hardly as yet come much in Bacon's way, and he never neglected it when it did come, nor his own fortune or vocation; his letters remain to attest his care in these respects. But no doubt Bacon was then as ready to be of use to Essex, the one man who seemed to understand and value him, as Essex was desirous to be of use to Bacon.

And it seemed as if Essex would have the ability as well as the wish. Essex was, without exception, the most brilliant man who ever appeared at Elizabeth's Court, and it seemed as if he were going to be the most powerful. Leicester was

dead. Burghley was growing old, and indisposed for the adventures and levity which, with all her grand power of ruling, Elizabeth loved. She needed a favourite, and Essex was unfortunately marked out for what she wanted. He had Leicester's fascination, without his mean and cruel selfishness. He was as generous, as gallant, as quick to descry all great things in art and life, as Philip Sidney, with more vigour and fitness for active life than Sidney. He had not Raleigh's sad, dark depths of thought, but he had a daring courage equal to Raleigh's, without Raleigh's cynical contempt for mercy and honour. He had every personal advantage requisite for a time when intellect, and ready wit, and high-tempered valour, and personal beauty, and skill in affairs, with equal skill in amusements, were expected to go together in the accomplished courtier. And Essex was a man not merely to be courted and admired, to shine and dazzle, but to be loved. Elizabeth, with her strange and perverse emotional constitution, loved him, if she ever loved any one. Every one who served him loved him; and he was, as much as any one could be in those days, a popular favourite. Under better fortune he might have risen to a great height of character; in Elizabeth's Court he was fated to be ruined.

For in that Court all the qualities in him which needed control received daily stimulus, and his ardour and high-aiming temper turned into impatience and restless irritability. He had a mistress who was at one time in the humour to be treated as a tender woman, at another as an outrageous flirt, at another as the haughtiest and most imperious of queens; her mood varied, no one could tell how, and it was most dangerous to mistake it. It was part of her pleasure to find in her favourite a spirit as high, a humour as contradictory and determined, as her own; it was the charming contrast to the obsequiousness or the prudence of the rest; but no one could be sure at what unlooked-for moment, and how fiercely, she might resent in earnest a display of what she had herself encouraged. Essex was ruined for all real greatness by having to suit himself to this bewildering and most unwholesome and degrading waywardness. She taught him to think himself irresistible in opinion and in claims; she amused herself in teaching him how completely he was mistaken. Alternately spoiled and crossed,

he learned to be exacting, unreasonable, absurd in his pettish resentments or brooding sullenness. He learned to think that she must be dealt with by the same methods which she herself employed. The effect was not produced in a moment; it was the result of a courtiership of sixteen years. But it ended in corrupting a noble nature. Essex came to believe that she who cowed others must be frightened herself; that the stinging injustice which led a proud man to expect, only to see how he would behave when refused, deserved to be brought to reason by a counter-buffet as rough as her own insolent caprice. He drifted into discontent, into disaffection, into neglect of duty, into questionable schemings for the future of a reign that must shortly end, into criminal methods of guarding himself, of humbling his rivals and regaining influence. A "fatal impatience," as Bacon calls it, gave his rivals an advantage which, perhaps in self-defence, they could not fail to take; and that career, so brilliant, so full of promise of good, ended in misery, in dishonour, in remorse, on the scaffold of the Tower.

With this attractive and powerful person Bacon's fortunes, in the last years of the century, became more and more knit up. Bacon was now past thirty, Essex a few years younger. In spite of Bacon's apparent advantage and interest at Court, in spite of abilities, which, though his genius was not yet known, his contemporaries clearly recognised, he was still a struggling and unsuccessful man: ambitious to rise, for no unworthy reasons, but needy, in weak health, with careless and expensive habits, and embarrassed with debt. He had hoped to rise by the favour of the Queen and for the sake of his father. For some ill-explained reason he was to the last disappointed. Though she used him "for matters of state and revenue," she either did not like him, or did not see in him the servant she wanted to advance. He went on to the last pressing his uncle, Lord Burghley. He applied in the humblest terms, he made himself useful with his pen, he got his mother to write for him; but Lord Burghley, probably because he thought his nephew more of a man of letters than a sound lawyer and practical public servant, did not care to bring him forward. From his cousin, Robert Cecil, Bacon received polite words and friendly assurances. Cecil may have undervalued him, or have been jealous of him, or suspected him as a friend of Essex; he certainly

gave Bacon good reason to think that his words meant nothing. Except Essex, and perhaps his brother Antony — the most affectionate and devoted of brothers — no one had yet recognised all that Bacon was. Meanwhile time was passing. The vastness, the difficulties, the attractions of that conquest of all knowledge which he dreamed of, were becoming greater every day to his thoughts. The law, without which he could not live, took up time and brought in little. Attendance on the Court was expensive, yet indispensable, if he wished for place. His mother was never very friendly, and thought him absurd and extravagant. Debts increased and creditors grumbled. The outlook was discouraging, when his friendship with Essex opened to him a more hopeful prospect.

In the year 1593 the Attorney-General's place was vacant, and Essex, who in that year became a Privy Councillor, determined that Bacon should be Attorney-General. Bacon's reputation as a lawyer was overshadowed by his philosophical and literary pursuits. He was thought young for the office, and he had not yet served in any subordinate place. And there was another man, who was supposed to carry all English law in his head, full of rude force and endless precedents, hard of heart and voluble of tongue, who also wanted it. An Attorney-General was one who would bring all the resources and hidden subtleties of English law to the service of the Crown, and use them with thorough-going and unflinching resolution against those whom the Crown accused of treason, sedition, or invasion of the prerogative. It is no wonder that the Cecils, and the Queen herself, thought Coke likely to be a more useful public servant than Bacon: it is certain what Coke himself thought about it, and what his estimate was of the man whom Essex was pushing against him. But Essex did not take up his friend's cause in the lukewarm fashion in which Burghley had patronised his nephew. There was nothing that Essex pursued with greater pertinacity. He importuned the Queen. He risked without scruple offending her. She apparently long shrank from directly refusing his request. The Cecils were for Coke — the "*Huddler*" as Bacon calls him, in a letter to Essex; but the appointment was delayed. All through 1593, and until April, 1594, the struggle went on.

When Robert Cecil suggested that Essex should be content with the Solicitor's place for Bacon, "praying him to be well advised, for if his Lordship had spoken of that it might have been of easier digestion to the Queen," he turned round on Cecil —

"Digest me no digesting," said the Earl; "for the Attorneyship is that I must have for Francis Bacon; and in that I will spend my uttermost credit, friendship, and authority against whomsoever, and that whosoever went about to procure it to others, that it should cost both the mediators and the suitors the setting on before they came by it. And this be you assured of, Sir Robert," quoth the Earl, "for now do I fully declare myself; and for your own part, Sir Robert, I do think much and strange both of my Lord your father and you, that can have the mind to seek the preferment of a stranger before so near a kinsman; namely, considering if you weigh in a balance his parts and sufficiency in any respect with those of his competitor, excepting only four poor years of admittance, which Francis Bacon hath more than recompensed with the priority of his reading; in all other respects you shall find no comparison between them."

But the Queen's disgust at some very slight show of independence on Bacon's part in Parliament, unforgiven in spite of repeated apologies, together with the influence of the Cecils and the pressure of so formidable and so useful a man as Coke, turned the scale against Essex. In April, 1594, Coke was made Attorney. Coke did not forget the pretender to law, as he would think him, who had dared so long to dispute his claims; and Bacon was deeply wounded. "No man," he thought, "had ever received a more exquisite disgrace," and he spoke of retiring to Cambridge "to spend the rest of his life in his studies and contemplations." But Essex was not discouraged. He next pressed eagerly for the Solicitorship. Again, after much waiting, he was foiled. An inferior man was put over Bacon's head. Bacon found that Essex, who could do most things, for some reason could not do this. He himself, too, had pressed his suit with the greatest importunity on the Queen, on Burghley, on Cecil, on every one who could help him; he reminded the Queen how many years ago it was since he first kissed her hand in her service, and ever since had used his wits to please; but it was all in

vain. For once he lost patience. He was angry with Essex; the Queen's anger with Essex had, he thought, recoiled on his friend. He was angry with the Queen; she held his long waiting cheap; she played with him and amused herself with delay; he would go abroad, and he "knew her Majesty's nature, that she neither careth though the whole surname of the Bacons travelled, nor of the Cecils neither." He was very angry with Robert Cecil; affecting not to believe them, he tells him stories he has heard of his corrupt and underhand dealing. He writes almost a farewell letter of ceremonious but ambiguous thanks to Lord Burghley, hoping that he would impute any offence that Bacon might have given to the "complexion of a suitor, and a tired sea-sick suitor," and speaking despairingly of his future success in the law. The humiliations of what a suitor has to go through torment him: "It is my luck," he writes to Cecil, "still to be akin to such things as I neither like in nature nor would willingly meet with in my course, but yet cannot avoid without show of base timorousness or else of unkind or suspicious strangeness." And to his friend Fulke Greville he thus unburdens himself:

"SIR, — I understand of your pains to have visited me, for which I thank you. My matter is an endless question. I assure you I had said *Requiesce anima mea*; but I now am otherwise put to my psalter; *Nolite confidere*. I dare go no further. Her Majesty had by set speech more than once assured me of her intention to call me to her service, which I could not understand but of the place I had been named to. And now whether *invidus homo hoc fecit*; or whether my matter must be an appendix to my Lord of Essex suit; or whether her Majesty, pretending to prove my ability, meaneth but to take advantage of some errors which, like enough, at one time or other I may commit; or what is it? but her Majesty is not ready to despatch it. And what though the Master of the Rolls, and my Lord of Essex, and yourself, and others, think my case without doubt, yet in the meantime I have a hard condition, to stand so that whatsoever service I do to her Majesty it shall be thought to be but *servitium viscatum*, lime-twigs and fetches to place myself; and so I shall have envy, not thanks. This is a course to quench all good spirits, and to corrupt every man's nature, which will, I fear, much hurt

her Majesty's service in the end. I have been like a piece of stuff bespoken in the shop; and if her Majesty will not take me, it may be the selling by parcels will be more gainful. For to be, as I told you, like a child following a bird, which when he is nearest flieth away and lighteth a little before, and then the child after it again, and so *in infinitum*, I am weary of it; as also of wearying my good friends, of whom, nevertheless, I hope in one course or other gratefully to deserve. And so, not forgetting your business, I leave to trouble you with this idle letter; being but *justa et moderata querimonia*; for indeed I do confess, *primus amor* will not easily be cast off. And thus again I commend me to you."

After one more effort the chase was given up, at least for the moment; for it was soon resumed. But just now Bacon felt that all the world was against him. He would retire "out of the sunshine into the shade." One friend only encouraged him. He did more. He helped him when Bacon most wanted help, in his straitened and embarrassed "estate." Essex, when he could do nothing more, gave Bacon an estate worth at least £1800. Bacon's resolution is recorded in the following letter:

"IT MAY PLEASE YOUR GOOD LORDSHIP, — I pray God her Majesty's weighing be not like the weight of a balance, *gravia deorsum levia sursum*. But I am as far from being altered in devotion towards her, as I am from distrust that she will be altered in opinion towards me, when she knoweth me better. For myself, I have lost some opinion, some time, and some means; this is my account; but then for opinion, it is a blast that goeth and cometh; for time, it is true it goeth and cometh not; but yet I have learned that it may be redeemed. For means, I value that most; and the rather, *because I am purposed not to follow the practice of the law* (*if her Majesty command me in any particular, I shall be ready to do her willing service*); and my reason is only, *because it drinketh too much time, which I have dedicated to better purposes*. But even for that point of estate and means, I partly lean to Thales' opinion, That a philosopher may be rich if he will. Thus your Lordship seeth how I comfort myself; to the increase whereof I would fain please myself to believe that to be true which my Lord Treasurer writeth; which is, that it is more than a philosopher morally can

disgest. But without any such high conceit, I esteem it like the pulling out of an aching tooth, which, I remember, when I was a child, and had little philosophy, I was glad of when it was done. For your Lordship, I do think myself more beholding to you than to any man. And I say, I reckon myself as a *common* (not popular but *common*); and as much as is lawful to be enclosed of a common, so much your Lordship shall be sure to have. — Your Lordship's to obey your honourable commands, more settled than ever."

It may be that, as Bacon afterwards maintained, the closing sentences of this letter implied a significant reserve of his devotion. But during the brilliant and stormy years of Essex's career which followed, Bacon's relations to him continued unaltered. Essex pressed Bacon's claims whenever a chance offered. He did his best to get Bacon a rich wife — the young widow of Sir Christopher Hatton — but in vain. Instead of Bacon she accepted Coke, and became famous afterwards in the great family quarrel, in which Coke and Bacon again found themselves face to face, and which nearly ruined Bacon before the time. Bacon worked for Essex when he was wanted, and gave the advice which a shrewd and cautious friend would give to a man who, by his success and increasing pride and self-confidence, was running into serious dangers, arming against himself deadly foes, and exposing himself to the chances of fortune. Bacon was nervous about Essex's capacity for war, a capacity which perhaps was not proved, even by the most brilliant exploit of the time, the capture of Cadiz, in which Essex foreshadowed the heroic but well-calculated audacities of Nelson and Cochrane, and showed himself as little able as they to bear the intoxication of success, and to work in concert with envious and unfriendly associates. At the end of the year 1596, the year in which Essex had won such reputation at Cadiz, Bacon wrote him a letter of advice and remonstrance. It is a lively picture of the defects and dangers of Essex's behaviour as the Queen's favourite; and it is a most characteristic and worldly-wise summary of the ways which Bacon would have him take, to cure the one and escape the other. Bacon had, as he says, "good reason to think that the Earl's fortune comprehended his own." And the letter may perhaps be taken as an indirect warning to Essex that Bacon must, at any

rate, take care of his own fortune, if the Earl persisted in dangerous courses. Bacon shows how he is to remove the impressions, strong in the Queen's mind, of Essex's defects; how he is, by due submissions and stratagems, to catch her humour —

"But whether I counsel you the best, or for the best, duty bindeth me to offer to you my wishes. I said to your Lordship last time, *Martha, Martha, attendis ad plurima, unum sufficit*; win the Queen: if this be not the beginning, of any other course I see no end."

Bacon gives a series of minute directions how Essex is to disarm the Queen's suspicions, and to neutralize the advantage which his rivals take of them; how he is to remove "the opinion of his nature being *opiniastre* and not rulable;" how, avoiding the faults of Leicester and Hatton, he is, as far as he can, to "allege them for authors and patterns." Especially, he must give up that show of soldier-like distinction, which the Queen so disliked, and take some quiet post at Court. He must not alarm the Queen by seeking popularity; he must take care of his estate; he must get rid of some of his officers; and he must not be disquieted by other favourites.

Bacon wished, as he said afterwards, to see him "with a white staff in his hand, as my Lord of Leicester had," an honour and ornament to the Court in the eyes of the people and foreign ambassadors. But Essex was not fit for the part which Bacon urged upon him, that of an obsequious and vigilant observer of the Queen's moods and humours. As time went on, things became more and more difficult between him and his strange mistress; and there were never wanting men who, like Cecil and Raleigh, for good and bad reasons, feared and hated Essex, and who had the craft and the skill to make the most of his inexcusable errors. At last he allowed himself, from ambition, from the spirit of contradiction, from the blind passion for doing what he thought would show defiance to his enemies, to be tempted into the Irish campaign of 1599. Bacon at a later time claimed credit for having foreseen and foretold its issue. "I did as plainly see his overthrow, chained as it were by destiny to that journey, as it is possible for any man to ground a judgment on future contingents." He warned

Essex, so he thought in after years, of the difficulty of the work; he warned him that he would leave the Queen in the hands of his enemies: “It would be ill for her, ill for him, ill for the State.” “I am sure,” he adds, “I never in anything in my life dealt with him in like earnestness by speech, by writing, and by all the means I could devise.” But Bacon’s memory was mistaken. We have his letters. When Essex went to Ireland, Bacon wrote only in the language of sanguine hope — so little did he see “overthrow chained by destiny to that journey,” that “some good spirit led his pen to presage to his Lordship success;” he saw in the enterprise a great occasion of honour to his friend; he gave prudent counsels, but he looked forward confidently to Essex being as “fatal a captain to that war, as Africanus was to the war of Carthage.” Indeed, however anxious he may have been, he could not have foreseen Essex’s unaccountable and to this day unintelligible failure. But failure was the end, from whatever cause; failure, disgraceful and complete. Then followed wild and guilty but abortive projects for retrieving his failure, by using his power in Ireland to make himself formidable to his enemies at Court, and even to the Queen herself. He intrigued with Tyrone; he intrigued with James of Scotland; he plunged into a whirl of angry and baseless projects, which came to nothing the moment they were discussed. How empty and idle they were was shown by his return against orders to tell his own story at Nonsuch, and by thus placing himself alone and undeniably in the wrong, in the power of the hostile Council. Of course it was not to be thought of that Cecil should not use his advantage in the game. It was too early, irritated though the Queen was, to strike the final blow. But it is impossible not to see, looking back over the miserable history, that Essex was treated in a way which was certain, sooner or later, to make him, being what he was, plunge into a fatal and irretrievable mistake. He was treated as a cat treats a mouse; he was worried, confined, disgraced, publicly reprimanded, brought just within verge of the charge of treason, but not quite, just enough to discredit and alarm him, but to leave him still a certain amount of play. He was made to see that the Queen’s favour was not quite hopeless; but that nothing but the most absolute and unreserved humiliation could recover it. It was plain to any one

who knew Essex that this treatment would drive Essex to madness. “These same gradations of yours” — so Bacon represents himself expostulating with the Queen on her caprices— “are fitter to corrupt than to correct any mind of greatness.” They made Essex desperate; he became frightened for his life, and he had reason to be so, though not in the way which he feared. At length came the stupid and ridiculous outbreak of the 8th of February, 1600/1601, a plot to seize the palace and raise the city against the ministers, by the help of a few gentlemen armed only with their rapiers. As Bacon himself told the Queen, “if some base and cruel-minded persons had entered into such an action, it might have caused much blow and combustion; but it appeared well that they were such as knew not how to play the malefactors!” But it was sufficient to bring Essex within the doom of treason.

Essex knew well what the stake was. He lost it, and deserved to lose it, little as his enemies deserved to win it; for they, too, were doing what would have cost them their heads if Elizabeth had known it — corresponding, as Essex was accused of doing, with Scotland about the succession, and possibly with Spain. But they were playing cautiously and craftily; he with bungling passion. He had been so long accustomed to power and place, that he could not endure that rivals should keep him out of it. They were content to have their own way, while affecting to be the humblest of servants; he would be nothing less than a Mayor of the Palace. He was guilty of a great public crime, as every man is who appeals to arms for anything short of the most sacred cause. He was bringing into England, which had settled down into peaceable ways, an imitation of the violent methods of France and the Guises. But the crime as well as the penalty belonged to the age, and crimes legally said to be against the State mean morally very different things, according to the state of society and opinion. It is an unfairness verging on the ridiculous, when the ground is elaborately laid for keeping up the impression that Essex was preparing a real treason against the Queen like that of Norfolk. It was a treason of the same sort and order as that for which Northumberland sent Somerset to the block: the treason of being an unsuccessful rival.

Meanwhile Bacon had been getting gradually into the unofficial employ of the Government. He had become one of the "Learned Counsel" — lawyers with subordinate and intermittent work, used when wanted, but without patent or salary, and not ranking with the regular law officers. The Government had found him useful in affairs of the revenue, in framing interrogatories for prisoners in the Tower, in drawing up reports of plots against the Queen. He did not in this way earn enough to support himself; but he had thus come to have some degree of access to the Queen, which he represents as being familiar and confidential, though he still perceived, as he says himself, that she did not like him. At the first news of Essex's return to England, Bacon greeted him —

"MY LORD, — Conceiving that your Lordship came now up in the person of a good servant to see your sovereign mistress, which kind of compliments are many times *instar magnorum meritorum*, and therefore it would be hard for me to find you, I have committed to this poor paper the humble salutations of him *that is more yours than any man's, and more yours than any man*. To these salutations I add a due and joyful gratulation, confessing that your Lordship, in your last conference with me before your journey, spake not in vain, God making it good, That you trusted we should say *Quis putasset*! Which as it is found true in a happy sense, so I wish you do not find another *Quis putasset* in the manner of taking this so great a service. But I hope it is, as he said, *Nubecula est, cito transibit*, and that your Lordship's wisdom and obsequious circumspection and patience will turn all to the best. So referring all to some time that I may attend you, I commit you to God's best preservation."

But when Essex's conduct in Ireland had to be dealt with, Bacon's services were called for; and from this time his relations towards Essex were altered. Every one, no one better than the Queen herself, knew all that he owed to Essex. It is strangely illustrative of the time, that especially as Bacon held so subordinate a position, he should have been required, and should have been trusted, to act against his only and most generous benefactor. It is strange, too, that however great his loyalty to the Queen, however much and sincerely he might condemn his friend's conduct, he should think it possible to accept the

task. He says that he made some remonstrance; and he says, no doubt truly, that during the first stage of the business he used the ambiguous position in which he was placed to soften Essex's inevitable punishment, and to bring about a reconciliation between him and the Queen. But he was required, as the Queen's lawyer, to set forth in public Essex's offences; and he admits that he did so "not over tenderly." Yet all this, even if we have misgivings about it, is intelligible. If he had declined, he could not, perhaps, have done the service which he assures us that he tried to do for Essex; and it is certain that he would have had to reckon with the terrible lady who in her old age still ruled England from the throne of Henry VIII., and who had certainly no great love for Bacon himself. She had already shown him in a much smaller matter what was the forfeit to be paid for any resistance to her will. All the hopes of his life must perish; all the grudging and suspicious favours which he had won with such unremitting toil and patient waiting would be sacrificed, and he would henceforth live under the wrath of those who never forgave. And whatever he did for himself, he believed that he was serving Essex. His scheming imagination and his indefatigable pen were at work. He tried strange indirect methods; he invented a correspondence between his brother and Essex, which was to fall into the Queen's hands in order to soften her wrath and show her Essex's most secret feelings. When the Queen proposed to dine with him at his lodge in Twickenham Park, "though I profess not to be a poet," he "prepared a sonnet tending and alluding to draw on her Majesty's reconcilement to my Lord." It was an awkward thing for one who had been so intimate with Essex to be so deep in the counsels of those who hated him. He complains that many people thought him ungrateful and disloyal to his friend, and that stories circulated to his disadvantage, as if he were poisoning the Queen's ear against Essex. But he might argue fairly enough that, wilful and wrong-headed as Essex had been, it was the best that he could now do for him; and as long as it was only a question of Essex's disgrace and enforced absence from Court, Bacon could not be bound to give up the prospects of his life — indeed, his public duty as a subordinate servant of government — on account of his friend's inexcusable and dangerous follies. Essex did not see it so, and in the

subjoined correspondence had the advantage; but Bacon's position, though a higher one might be imagined, where men had been such friends as these two men had been, is quite a defensible one:

"MY LORD, — No man can better expound my doings than your Lordship, which maketh me need to say the less. Only I humbly pray you to believe that I aspire to the conscience and commendation first of *bonus civis*, which with us is a good and true servant to the Queen, and next of *bonus vir*, that is an honest man. I desire your Lordship also to think that though I confess I love some things much better than I love your Lordship — as the Queen's service, her quiet and contentment, her honour, her favour, the good of my country, and the like — yet I love few persons better than yourself, both for gratitude's sake and for your own virtues, which cannot hurt but by accident or abuse. Of which my good affection I was ever ready and am ready to yield testimony by any good offices, but with such reservations as yourself cannot but allow; for as I was ever sorry that your Lordship should fly with waxen wings, doubting Icarus's fortune, so for the growing up of your own feathers, specially ostrich's, or any other save of a bird of prey, no man shall be more glad. And this is the axletree whereupon I have turned and shall turn, which to signify to you, though I think you are of yourself persuaded as much, is the cause of my writing; and so I commend your Lordship to God's goodness. From Gray's Inn, this 20th day of July, 1600.

"Your Lordship's most humbly,
"FR. BACON."

To this letter Essex returned an answer of dignified reserve, such as Bacon might himself have dictated —

"MR. BACON, — I can neither expound nor censure your late actions, being ignorant of all of them, save one, and having directed my sight inward only, to examine myself. You do pray me to believe that you only aspire to the conscience and commendation of *bonus civis* and *bonus vir*; and I do faithfully assure you, that while that is your ambition (though your course be active and

mine contemplative), yet we shall both *convenire in codem tertio* and *convenire inter nosipsos*. Your profession of affection and offer of good offices are welcome to me. For answer to them I will say but this, that you have believed I have been kind to you, and you may believe that I cannot be other, either upon humour or my own election. I am a stranger to all poetical conceits, or else I should say somewhat of your poetical example. But this I must say, that I never flew with other wings than desire to merit and confidence in my Sovereign's favour; and when one of these wings failed me I would light nowhere but at my Sovereign's feet, though she suffered me to be bruised with my fall. And till her Majesty, that knows I was never bird of prey, finds it to agree with her will and her service that my wings should be imped again, I have committed myself to the mire. No power but my God's and my Sovereign's can alter this resolution of

"Your retired friend,
"ESSEX."

But after Essex's mad attempt in the city a new state of things arose. The inevitable result was a trial for high treason, a trial of which no one could doubt the purpose and end. The examination of accomplices revealed speeches, proposals, projects, not very intelligible to us in the still imperfectly understood game of intrigue that was going on among all parties at the end of Elizabeth's reign, but quite enough to place Essex at the mercy of the Government and the offended Queen. "The new information," says Mr. Spedding, "had been immediately communicated to Coke and Bacon." Coke, as Attorney-General, of course conducted the prosecution; and the next prominent person on the side of the Crown was not the Solicitor, or any other regular law officer, but Bacon, though holding the very subordinate place of one of the "Learned Counsel."

It does not appear that he thought it strange, that he showed any pain or reluctance, that he sought to be excused. He took it as a matter of course. The part assigned to Bacon in the prosecution was as important as that of Coke; and he played it more skilfully and effectively. Trials in those days were confused

affairs, often passing into a mere wrangle between the judges, lawyers, and lookers-on, and the prisoner at the bar. It was so in this case. Coke is said to have blundered in his way of presenting the evidence, and to have been led away from the point into an altercation with Essex. Probably it really did not much matter; but the trial was getting out of its course and inclining in favour of the prisoner, till Bacon — Mr. Spedding thinks, out of his regular turn — stepped forward and retrieved matters. This is Mr. Spedding's account of what Bacon said and did:

"By this time the argument had drifted so far away from the point that it must have been difficult for a listener to remember what it was that the prisoners were charged with, or how much of the charge had been proved. And Coke, who was all this time the sole speaker on behalf of the Crown, was still following each fresh topic that rose before him, without the sign of an intention or the intimation of a wish to return to the main question and reform the broken ranks of his evidence. Luckily he seems to have been now at a loss what point to take next, and the pause gave Bacon an opportunity of rising. It can hardly have been in pursuance of previous arrangements; for though it was customary in those days to distribute the evidence into parts and to assign several parts to several counsel, there had been no appearance as yet of any part being concluded. It is probable that the course of the trial had upset previous arrangements and confused the parts. At any rate so it was, however it came to pass, that when Cecil and Essex had at last finished their expostulation and parted with charitable prayers, each that the other might be forgiven, then (says our reporter) Mr. Bacon entered into a speech much after this fashion:

"'In speaking of this late and horrible rebellion which hath been in the eyes and ears of all men, I shall save myself much labour in opening and enforcing the points thereof, insomuch as I speak not before a country jury of ignorant men, but before a most honourable assembly of the greatest Peers of the land, whose wisdoms conceive far more than my tongue can utter; yet with your gracious and honourable favours I will presume, if not for information of your Honours, yet for the discharge of my duty, to say thus much. No man can be ignorant, that knows matters of former ages — and all history makes it plain —

that there was never any traitor heard of that durst directly attempt the seat of his liege prince but he always coloured his practices with some plausible pretence. For God hath imprinted such a majesty in the face of a prince that no private man dare approach the person of his sovereign with a traitorous intent. And therefore they run another side course, *oblique et à latere*: some to reform corruptions of the State and religion; some to reduce the ancient liberties and customs pretended to be lost and worn out; some to remove those persons that being in high places make themselves subject to envy; but all of them aim at the overthrow of the State and destruction of the present rulers. And this likewise is the use of those that work mischief of another quality; as Cain, that first murderer, took up an excuse for his fact, shaming to outface it with impudency, thus the Earl made his colour the severing some great men and councillors from her Majesty's favour, and the fear he stood in of his pretended enemies lest they should murder him in his house. Therefore he saith he was compelled to fly into the City for succour and assistance; not much unlike Pisistratus, of whom it was so anciently written how he gashed and wounded himself, and in that sort ran crying into Athens that his life was sought and like to have been taken away; thinking to have moved the people to have pitied him and taken his part by such counterfeited harm and danger; whereas his aim and drift was to take the government of the city into his hands and alter the form thereof. With like pretences of dangers and assaults the Earl of Essex entered the City of London and passed through the bowels thereof, blanching rumours that he should have been murdered and that the State was sold; whereas he had no such enemies, no such dangers: persuading themselves that if they could prevail all would have done well. But now *magna scelera terminantur in hæresin*; for you, my Lord, should know that though princes give their subjects cause of discontent, though they take away the honours they have heaped upon them, though they bring them to a lower estate than they raised them from, yet ought they not to be so forgetful of their allegiance that they should enter into any undutiful act; much less upon rebellion, as you, my Lord, have done. All whatsoever you have or can say in

answer hereof are but shadows. And therefore methinks it were best for you to confess, not to justify.'"

Essex was provoked by Bacon's incredulous sneer about enemies and dangers — "I call forth Mr. Bacon against Mr. Bacon," and referred to the letters which Bacon had written in his name, and in which these dangerous enmities were taken for granted. Bacon, in answer, repeated what he said so often— "That he had spent more time in vain in studying how to make the Earl a good servant to the Queen and State than he had done in anything else." Once more Coke got the proceedings into a tangle, and once more Bacon came forward to repair the miscarriage of his leader.

"'I have never yet seen in any case such favour shown to any prisoner; so many digressions, such delivering of evidence by fractions, and so silly a defence of such great and notorious treasons. May it please your Grace, you have seen how weakly he hath shadowed his purpose and how slenderly he hath answered the objections against him. But, my Lord, I doubt the variety of matters and the many digressions may minister occasion of forgetfulness, and may have severed the judgments of the Lords; and therefore I hold it necessary briefly to recite the Judges' opinions.'

"That being done, he proceeded to this effect:

"'Now put the case that the Earl of Essex's intents were, as he would have it believed, to go only as a suppliant to her Majesty. Shall their petitions be presented by armed petitioners? This must needs bring loss of property to the prince. Neither is it any point of law, as my Lord of Southampton would have it believed, that condemns them of treason. To take secret counsel, to execute it, to run together in numbers armed with weapons — what can be the excuse? Warned by the Lord Keeper, by a herald, and yet persist! Will any simple man take this to be less than treason?'

"The Earl of Essex answered that if he had purposed anything against others than those his private enemies, he would not have stirred with so slender a company. Whereunto Mr. Bacon answered:

“‘It was not the company you carried with you but the assistance you hoped for in the City which you trusted unto. The Duke of Guise thrust himself into the streets of Paris on the day of the Barricades in his doublet and hose, attended only with eight gentlemen, and found that help in the city which (thanks be to God) you failed of here. And what followed? The King was forced to put himself into a pilgrim’s weeds, and in that disguise to steal away to scape their fury. Even such was my Lord’s confidence too, and his pretence the same — an all-hail and a kiss to the City. But the end was treason, as hath been sufficiently proved. But when he had once delivered and engaged himself so far into that which the shallowness of his conceit could not accomplish as he expected, the Queen for her defence taking arms against him, he was glad to yield himself; and thinking to colour his practices, turned his pretexts, and alleged the occasion thereof to proceed from a private quarrel.’

“To this” (adds the reporter) “the Earl answered little. Nor was anything said afterwards by either of the prisoners, either in the thrust-and-parry dialogue with Coke that followed, or when they spoke at large to the question why judgment should not be pronounced, which at all altered the complexion of the case. They were both found guilty and sentence passed in the usual form.”

Bacon’s legal position was so subordinate a place that there must have been a special reason for his employment. It is difficult to avoid the conclusion that, on the part of the Government, Bacon was thus used for the very reason that he had been the friend of Essex. He was not commonly called upon in such prosecutions. He was not employed by Cecil in the Winchester trials of Raleigh, Grey, and Cobham, three years afterwards, nor in those connected with the Gunpowder Plot. He was called upon now because no one could so much damage Essex; and this last proof of his ready service was required by those whose favour, since Essex had gone hopelessly wrong, he had been diligently seeking. And Bacon acquiesced in the demand, apparently without surprise. No record remains to show that he felt any difficulty in playing his part. He had persuaded himself that his public duty, his duty as a good citizen to the Queen

and the commonwealth, demanded of him that he should obey the call to do his best to bring a traitor to punishment.

Public duty has claims on a man as well as friendship, and in many conceivable cases claims paramount to those of friendship. And yet friendship, too, has claims, at least on a man's memory. Essex had been a dear friend, if words could mean anything. He had done more than any man had done for Bacon, generously and nobly, and Bacon had acknowledged it in the amplest terms. Only a year before he had written, "I am as much yours as any man's, and as much yours as any man." It is not, and it was not, a question of Essex's guilt. It may be a question whether the whole matter was not exaggerated as to its purpose, as it certainly was as to its real danger and mischief. We at least know that his rivals dabbled in intrigue and foolish speeches as well as he; that little more than two years afterwards Raleigh and Grey and Cobham were condemned for treason in much the same fashion as he was; that Cecil to the end of his days — with whatever purpose — was a pensioner of Spain. The question was not whether Essex was guilty. The question for Bacon was, whether it was becoming in him, having been what he had been to Essex, to take a leading part in proceedings which were to end in his ruin and death. He was not a judge. He was not a regular law officer like Coke. His only employment had been casual and occasional. He might, most naturally, on the score of his old friendship, have asked to be excused. Condemning, as he did, his friend's guilt and folly, he might have refused to take part in a cause of blood, in which his best friend must perish. He might honestly have given up Essex as incorrigible, and have retired to stand apart in sorrow and silence while the inevitable tragedy was played out. The only answer to this is, that to have declined would have incurred the Queen's displeasure: he would have forfeited any chance of advancement; nay, closely connected as he had been with Essex, he might have been involved in his friend's ruin. But inferior men have marred their fortunes by standing by their friends in not undeserved trouble, and no one knew better than Bacon what was worthy and noble in human action. The choice lay before him. He seems hardly to have gone through any struggle. He persuaded himself that he could not help

himself, under the constraint of his duty to the Queen, and he did his best to get Essex condemned.

And this was not all. The death of Essex was a shock to the popularity of Elizabeth greater than anything that had happened in her long reign. Bacon's name also had come into men's mouths as that of a time-server who played fast and loose with Essex and his enemies, and who, when he had got what he could from Essex, turned to see what he could get from those who put him to death. A justification of the whole affair was felt to be necessary; and Bacon was fixed upon for the distinction and the dishonour of doing it. No one could tell the story so well, and it was felt that he would not shrink from it. Nor did he. In cold blood he sat down to blacken Essex, using his intimate personal knowledge of the past to strengthen his statements against a friend who was in his grave, and for whom none could answer but Bacon himself. It is a well-compacted and forcible account of Essex's misdoings, on which of course the colour of deliberate and dangerous treason was placed. Much of it, no doubt, was true; but even of the facts, and much more of the colour, there was no check to be had, and it is certain that it was an object to the Government to make out the worst. It is characteristic that Bacon records that he did not lose sight of the claims of courtesy, and studiously spoke of "my Lord of Essex" in the draft submitted for correction to the Queen; but she was more unceremonious, and insisted that the "rebel" should be spoken of simply as "Essex."

After a business of this kind, fines and forfeitures flowed in abundantly, and were "usually bestowed on deserving servants or favoured suitors by way of reward;" and Bacon came in for his share. Out of one of the fines he received £1200. "The Queen hath done something for me," he writes to a friendly creditor, "though not in the proportion I had hoped," and he afterwards asked for something more. It was rather under the value of Essex's gift to him in 1594. But she still refused him all promotion. He was without an official place in the Queen's service, and he never was allowed to have it. It is clear that the "Declaration of the Treason of the Earl of Essex," if it justified the Government, did not remove the odium which had fallen on Bacon. Mr. Spedding says that he

can find no signs of it. The proof of it is found in the "Apology" which Bacon found it expedient to write after Elizabeth's death and early in James's reign. He found that the recollection of the way in which he had dealt with his friend hung heavy upon him; men hesitated to trust him in spite of his now recognised ability. Accordingly, he drew up an apology, which he addressed to Lord Mountjoy, the friend, in reality half the accomplice, of Essex, in his wild, ill-defined plan for putting pressure on Elizabeth. It is a clear, able, of course *ex parte* statement of the doings of the three chief actors, two of whom could no longer answer for themselves, or correct and contradict the third. It represents the Queen as implacable and cruel, Essex as incorrigibly and outrageously wilful, proud, and undutiful, Bacon himself as using every effort and device to appease the Queen's anger and suspiciousness, and to bring Essex to a wiser and humbler mind. The picture is indeed a vivid one, and full of dramatic force, of an unrelenting and merciless mistress bent on breaking and bowing down to the dust the haughty spirit of a once-loved but rebellious favourite, whom, though he has deeply offended, she yet wishes to bring once more under her yoke; and of the calm, keen-witted looker-on, watching the dangerous game, not without personal interest, but with undisturbed presence of mind, and doing his best to avert an irreparable and fatal breach. How far he honestly did his best for his misguided friend we can only know from his own report; but there is no reason to think that he did Essex ill service, though he notices in passing an allegation that the Queen in one of her angry fits had charged him with this. But his interest clearly was to make up the quarrel between the Queen and Essex. Bacon would have been a greater man with both of them if he had been able to do so. He had been too deeply in Essex's intimacy to make his new position of mediator, with a strong bias on the Queen's side, quite safe and easy for a man of honourable mind; but a cool-judging and prudent man may well have acted as he represents himself acting without forgetting what he owed to his friend. Till the last great moment of trial there is a good deal to be said for Bacon: a man keenly alive to Essex's faults, with a strong sense of what he owed to the Queen and the State, and with his own reasonable chances of rising greatly prejudiced by Essex's

folly. But at length came the crisis which showed the man, and threw light on all that had passed before, when he was picked out, out of his regular place, to be charged with the task of bringing home the capital charge against Essex. He does not say he hesitated. He does not say that he asked to be excused the terrible office. He did not flinch as the minister of vengeance for those who required that Essex should die. He did his work, we are told by his admiring biographer, better than Coke, and repaired the blunders of the prosecution. He passes over very shortly this part of the business: “It was laid upon me with the rest of my fellows;” yet it is the knot and key of the whole, as far as his own character is concerned. Bacon had his public duty: his public duty may have compelled him to stand apart from Essex. But it was his interest, it was no part of his public duty, which required him to accept the task of accuser of his friend, and in his friend’s direst need calmly to drive home a well-directed stroke that should extinguish chances and hopes, and make his ruin certain. No one who reads his anxious letters about preferment and the Queen’s favour, about his disappointed hopes, about his straitened means and distress for money, about his difficulties with his creditors — he was twice arrested for debt — can doubt that the question was between his own prospects and his friend; and that to his own interest he sacrificed his friend and his own honour.

CHAPTER III.

BACON AND JAMES I.

Bacon's life was a double one. There was the life of high thinking, of disinterested aims, of genuine enthusiasm, of genuine desire to delight and benefit mankind, by opening new paths to wonder and knowledge and power. And there was the put on and worldly life, the life of supposed necessities for the provision of daily bread, the life of ambition and self-seeking, which he followed, not without interest and satisfaction, but at bottom because he thought he must — must be a great man, must be rich, must live in the favour of the great, because without it his great designs could not be accomplished. His original plan of life was disclosed in his letter to Lord Burghley: to get some office with an assured income and not much work, and then to devote the best of his time to his own subjects. But this, if it was really his plan, was gradually changed: first, because he could not get such a place; and next because his connection with Essex, the efforts to gain him the Attorney's place, and the use which the Queen made of him after Essex could do no more for him, drew him more and more into public work, and specially the career of the law. We know that he would not by preference have chosen the law, and did not feel that his vocation lay that way; but it was the only way open to him for mending his fortunes. And so the two lives went on side by side, the worldly one — he would have said, the practical one — often interfering with the life of thought and discovery, and partly obscuring it, but yet always leaving it paramount in his own mind. His dearest and most cherished ideas, the thoughts with which he was most at home and happiest, his deepest and truest ambitions, were those of an enthusiastic and romantic believer in a great discovery just within his grasp. They were such as the dreams and visions of his great Franciscan namesake, and of the imaginative seekers after knowledge in the middle ages, real or mythical, Albert the Great, Cornelius Agrippa, Dr. Faustus; they were the eager,

undoubting hopes of the physical students in Italy and England in his own time, Giordano Bruno, Telesio, Campanella, Gilbert, Galileo, or the founders of the Italian prototype of "Solomon's House" in the *New Atlantis*, the precursor of our Royal Societies, the Academy of the *Lincei* at Rome. Among these meditations was his inner life. But however he may have originally planned his course, and though at times under the influence of disappointment he threatened to retire to Cambridge or to travel abroad, he had bound himself fast to public life, and soon ceased to think of quitting it. And he had a real taste for it — for its shows, its prizes, for the laws and turns of the game, for its debates and vicissitudes. He was no mere idealist or recluse to undervalue or despise the real grandeur of the world. He took the keenest interest in the nature and ways of mankind; he liked to observe, to generalise in shrewd and sometimes cynical epigrams. He liked to apply his powerful and fertile intellect to the practical problems of society and government, to their curious anomalies, to their paradoxical phenomena; he liked to address himself, either as an expounder or a reformer, to the principles and entanglements of English law; he aspired, both as a lecturer and a legislator, to improve and simplify it. It was not beyond his hopes to shape a policy, to improve administration, to become powerful by bringing his sagacity and largeness of thought to the service of the State, in reconciling conflicting forces, in mediating between jealous parties and dangerous claims. And he liked to enter into the humours of a Court; to devote his brilliant imagination and affluence of invention either to devising a pageant which should throw all others into the shade, or a compromise which should get great persons out of some difficulty of temper or pique.

In all these things he was as industrious, as laborious, as calmly persevering and tenacious, as he was in his pursuit of his philosophical speculations. He was a compound of the most adventurous and most diversified ambition, with a placid and patient temper, such as we commonly associate with moderate desires and the love of retirement and an easy life. To imagine and dare anything, and never to let go the object of his pursuit, is one side of him; on the other he is obsequiously desirous to please and fearful of giving offence, the humblest and

most grateful and also the most importunate of suitors, ready to bide his time with an even cheerfulness of spirit, which yet it was not safe to provoke by ill offices and the wish to thwart him. He never misses a chance of proffering his services; he never lets pass an opportunity of recommending himself to those who could help him. He is so bent on natural knowledge that we have a sense of incongruity when we see him engaging in politics as if he had no other interest. He throws himself with such zest into the language of the moralist, the theologian, the historian, that we forget we have before us the author of a new departure in physical inquiry, and the unwearied compiler of tables of natural history. When he is a lawyer, he seems only a lawyer. If he had not been the author of the *Instauratio*, his life would not have looked very different from that of any other of the shrewd and supple lawyers who hung on to the Tudor and Stuart Courts, and who unscrupulously pushed their way to preferment. He claimed to be, in spite of the misgivings of Elizabeth and her ministers, as devoted to public work and as capable of it as any of them. He was ready for anything, for any amount of business, ready, as in everything, to take infinite trouble about it. The law, if he did not like it, was yet no by-work with him; he was as truly ambitious as the men with whom he maintained so keen and for long so unsuccessful a rivalry. He felt bitterly the disappointment of seeing men like Coke and Fleming and Doddridge and Hobart pass before him; he could not, if he had been only a lawyer, have coveted more eagerly the places, refused to him, which they got; only, he had besides a whole train of purposes, an inner and supreme ambition, of which they knew nothing. And with all this there is no apparent consciousness of these manifold and varied interests. He never affected to conceal from himself his superiority to other men in his aims and in the grasp of his intelligence. But there is no trace that he prided himself on the variety and versatility of these powers, or that he even distinctly realized to himself that it was anything remarkable that he should have so many dissimilar objects and be able so readily to pursue them in such different directions.

It is doubtful whether, as long as Elizabeth lived, Bacon could ever have risen above his position among the “Learned Counsel,” an office without patent or

salary or regular employment. She used, him, and he was willing to be used; but he plainly did not appear in her eyes to be the kind of man who would suit her in the more prominent posts of her Government. Unusual and original ability is apt, till it is generally recognised, to carry with it suspicion and mistrust as to its being really all that it seems to be. Perhaps she thought of the possibility of his flying out unexpectedly at some inconvenient pinch, and attempting to serve her interests, not in her way, but in his own; perhaps she distrusted in business and state affairs so brilliant a discourser, whose heart was known, first and above all, to be set on great dreams of knowledge; perhaps those interviews with her in which he describes the counsels which he laid before her, and in which his shrewdness and foresight are conspicuous, may not have been so welcome to her as he imagined; perhaps, it is not impossible, that he may have been too compliant for her capricious taste, and too visibly anxious to please. Perhaps, too, she could not forget, in spite of what had happened, that he had been the friend, and not the very generous friend, of Essex. But, except as to a share of the forfeitures, with which he was not satisfied, his fortunes did not rise under Elizabeth.

Whatever may have been the Queen's feelings towards him, there is no doubt that one powerful influence, which lasted into the reign of James, was steadily adverse to his advancement. Burghley had been strangely niggardly in what he did to help his brilliant nephew; he was going off the scene, and probably did not care to trouble himself about a younger and uncongenial aspirant to service. But his place was taken by his son, Robert Cecil; and Cecil might naturally have been expected to welcome the co-operation of one of his own family who was foremost among the rising men of Cecil's own generation, and who certainly was most desirous to do him service. But it is plain that he early made up his mind to keep Bacon in the background. It is easy to imagine reasons, though the apparent short-sightedness of the policy may surprise us; but Cecil was too reticent and self-controlled a man to let his reasons appear, and his words, in answer to his cousin's applications for his assistance, were always kind, encouraging, and vague. But we must judge by the event, and that makes it clear

that Cecil did not care to see Bacon in high position. Nothing can account for Bacon's strange failure for so long a time to reach his due place in the public service but the secret hostility, whatever may have been the cause, of Cecil.

There was also another difficulty. Coke was the great lawyer of the day, a man whom the Government could not dispense with, and whom it was dangerous to offend. And Coke thoroughly disliked Bacon. He thought lightly of his law, and he despised his refinement and his passion for knowledge. He cannot but have resented the impertinence, as he must have thought it, of Bacon having been for a whole year his rival for office. It is possible that if people then agreed with Mr. Spedding's opinion as to the management of Essex's trial, he may have been irritated by jealousy; but a couple of months after the trial (April 29, 1601) Bacon sent to Cecil, with a letter of complaint, the following account of a scene in Court between Coke and himself:

"*A true remembrance of the abuse I received of Mr. Attorney-General publicly in the Exchequer the first day of term; for the truth whereof I refer myself to all that were present.*

"I moved to have a reseizure of the lands of Geo. Moore, a relapsed recusant, a fugitive and a practising traytor; and showed better matter for the Queen against the discharge by plea, which is ever with a *salvo jure*. And this I did in as gentle and reasonable terms as might be.

"Mr. Attorney kindled at it, and said, '*Mr. Bacon, if you have any tooth against me pluck it out; for it will do you more hurt than all the teeth in your head will do you good.*' I answered coldly in these very words: '*Mr. Attorney, I respect you; I fear you not; and the less you speak of your own greatness, the more I will think of it.*'

"He replied, '*I think scorn to stand upon terms of greatness towards you, who are less than little; less than the least;*' and other such strange light terms he gave me, with that insulting which cannot be expressed.

"Herewith stirred, yet I said no more but this: '*Mr. Attorney, do not depress me so far; for I have been your better, and may be again, when it please the Queen.*'

"With this he spake, neither I nor himself could tell what, as if he had been born Attorney-General; and in the end bade me not meddle with the Queen's business, but with mine own; and that I was unsworn, *etc.* I told him, sworn or unsworn was all one to an honest man; and that I ever set my service first, and myself second; and wished to God that he would do the like.

"Then he said, it were good to clap a *cap. ultegatum* upon my back! To which I only said he could not; and that he was at fault, for he hunted upon an old scent. He gave me a number of disgraceful words besides, which I answered with silence, and showing that I was not moved with them."

The threat of the *capias ultegatum* was probably in reference to the arrest of Bacon for debt in September, 1593. After this we are not surprised at Bacon writing to Coke, "who take to yourself a liberty to disgrace and disable my law, my experience, my discretion," that, "since I missed the Solicitor's place (the rather I think by your means) I cannot expect that you and I shall ever serve as Attorney and Solicitor together, but either serve with another on your remove, or step into some other course." And Coke, no doubt, took care that it should be so. Cecil, too, may possibly have thought that Bacon gave no proof of his fitness for affairs in thus bringing before him a squabble in which both parties lost their tempers.

Bacon was not behind the rest of the world in "the posting of men of good quality towards the King," in the rash which followed the Queen's death, of those who were eager to proffer their services to James, for whose peaceful accession Cecil had so skilfully prepared the way. He wrote to every one who, he thought, could help him: to Cecil, and to Cecil's man— "I pray you, as you find time let him know that he is the personage in the State which I love most;" to Northumberland, "If I may be of any use to your Lordship, by my head, tongue, pen, means, or friends, I humbly pray you to hold me your own;" to the King's Scotch friends and servants, even to Southampton, the friend of Essex, who had been shut up in the Tower since his condemnation with Essex, and who was now released. "This great change," Bacon assured him, "hath wrought in me no other change towards your Lordship than this, that I may safely be now that

which I truly was before." Bacon found in after years that Southampton was not so easily conciliated. But at present Bacon was hopeful: "In mine own particular," he writes, "I have many comforts and assurances; but in mine own opinion the chief is, that the *canvassing world is gone, and the deserving world is come*." He asks to be recommended to the King— "I commend myself to your love and to the well-using of my name, as well in repressing and answering for me, if there be any biting or nibbling at it in that place, as in impressing a good conceit and opinion of me, chiefly in the King, as otherwise in that Court." His pen had been used under the government of the Queen, and he had offered a draft of a proclamation to the King's advisers. But though he obtained an interview with the King, James's arrival in England brought no immediate prospect of improvement in Bacon's fortunes. Indeed, his name was at first inadvertently passed over in the list of Queen's servants who were to retain their places. The first thing we hear of is his arrest a second time for debt; and his letters of thanks to Cecil, who had rendered him assistance, are written in deep depression.

"For my purpose or course I desire to meddle as little as I can in the King's causes, his Majesty now abounding in counsel, and to follow my private thrift and practice, and to marry with some convenient advancement. For as for any ambition, I do assure your Honour, mine is quenched. In the Queen's, my excellent Mistress's, time the *quorum* was small: her service was a kind of freehold, and it was a more solemn time. All those points agreed with my nature and judgment. My ambition now I shall only put upon my pen, whereby I shall be able to maintain memory and merit of the times succeeding.

"Lastly, for this divulged and almost prostituted title of knighthood, I could without charge, by your Honour's mean, be content to have it, both because of this late disgrace and because I have three new knights in my mess in Gray's Inn's commons; and because I have found out an alderman's daughter, an handsome maiden, to my liking."

Cecil, however, seems to have required that the money should be repaid by the day; and Bacon only makes a humble request, which, it might be supposed,

could have been easily granted.

"IT MAY PLEASE YOUR GOOD LORDSHIP, — In answer of your last letter, your money shall be ready before your day: principal, interest, and costs of suit. So the sheriff promised, when I released errors; and a Jew takes no more. The rest cannot be forgotten, for I cannot forget your Lordship's *dum memor ipse mei*; and if there have been *aliquid nimis*, it shall be amended. And, to be plain with your Lordship, that will quicken me now which slackened me before. Then I thought you might have had more use of me than now I suppose you are like to have. Not but I think the impediment will be rather in my mind than in the matter or times. But to do you service I will come out of my religion at any time.

"For my knighthood, I wish the manner might be such as might grace me, since the matter will not; I mean, that I might not be merely gregarious in a troop. The coronation is at hand. It may please your Lordship to let me hear from you speedily. So I continue your Lordship's ever much bounden,

"FR. BACON.
"From Gorhambury, this 16th of July, 1603."

But it was not done. He "obtained his title, but not in a manner to distinguish him. He was knighted at Whitehall two days before the coronation, but had to share the honour with 300 others."

It was not quite true that his "ambition was quenched." For the rest of Cecil's life Cecil was the first man at James's Court; and to the last there was one thing that Bacon would not appear to believe — he did not choose to believe that it was Cecil who kept him back from employment and honour. To the last he persisted in assuming that Cecil was the person who would help, if he could, a kinsman devoted to his interests and profoundly conscious of his worth. To the last he commended his cause to Cecil in terms of unstinted affection and confiding hope. It is difficult to judge of the sincerity of such language. The mere customary language of compliment employed by every one at this time was of a kind which to us sounds intolerable. It seems as if nothing that ingenuity

could devise was too extravagant for an honest man to use, and for a man who respected himself to accept. It must not, indeed, be forgotten that conventionalities, as well as insincerity, differ in their forms in different times; and that insincerity may lurk behind frank and clear words, when they are the fashion, as much as in what is like mere fulsome adulation. But words mean something, in spite of forms and fashions. When a man of great genius writes his private letters, we wish generally to believe on the whole what he says; and there are no limits to the esteem, the honour, the confidence, which Bacon continued to the end to express towards Cecil. Bacon appeared to trust him — appeared, in spite of continued disappointments, to rely on his good-will and good offices. But for one reason or another Bacon still remained in the shade. He was left to employ his time as he would, and to work his way by himself.

He was not idle. He prepared papers which he meant should come before the King, on the pressing subjects of the day. The Hampton Court conference between the Bishops and the Puritan leaders was at hand, and he drew up a moderating paper on the *Pacification of the Church*. The feeling against him for his conduct towards Essex had not died away, and he addressed to Lord Mountjoy that *Apology concerning the Earl of Essex*, so full of interest, so skilfully and forcibly written, so vivid a picture of the Queen's ways with her servants, which has every merit except that of clearing Bacon from the charge of disloyalty to his best friend. The various questions arising out of the relations of the two kingdoms, now united under James, were presenting themselves. They were not of easy solution, and great mischief would follow if they were solved wrongly. Bacon turned his attention to them. He addressed a discourse to the King on the union of the two kingdoms, the first of a series of discussions on the subject which Bacon made peculiarly his own, and which, no doubt, first drew the King's attention and favour to him.

But for the first year of James's reign he was unnoticed by the King, and he was able to give his attention more freely to the great thought and hope of his life. This time of neglect gave him the opportunity of leisurely calling together and examining the ideas which had long had hold of his mind about the state of

human knowledge, about the possibilities of extending it, about the hopes and powers which that new knowledge opened, and about the methods of realising this great prospect. This, the passion of his life, never asleep even in the hottest days of business or the most hopeless days of defeat, must have had full play during these days of suspended public employment. He was a man who was not easily satisfied with his attempts to arrange the order and proportions of his plans for mastering that new world of unknown truth, which he held to be within the grasp of man if he would only dare to seize it; and he was much given to vary the shape of his work, and to try experiments in composition and even style. He wrote and rewrote. Besides what was finally published, there remains a larger quantity of work which never reached the stage of publication. He repeated over and over again the same thoughts, the same images and characteristic sayings. Among these papers is one which sums up his convictions about the work before him, and the vocation to which he had been called in respect of it. It is in the form of a "Proem" to a treatise on the *Interpretation of Nature*. It was never used in his published works; but, as Mr. Spedding says, it has a peculiar value as an authentic statement of what he looked upon as his special business in life. It is this mission which he states to himself in the following paper. It is drawn up in "stately Latin." Mr. Spedding's translation is no unworthy representation of the words of the great Prophet of Knowledge:

"Believing that I was born for the service of mankind, and regarding the care of the Commonwealth as a kind of common property which, like the air and water, belongs to everybody, I set myself to consider in what way mankind might be best served, and what service I was myself best fitted by nature to perform.

"Now among all the benefits that could be conferred upon mankind, I found none so great as the discovery of new arts, endowments, and commodities for the bettering of man's life.... But if a man could succeed, not in striking out some particular invention, however useful, but in kindling a light in nature — a light that should in its very rising touch and illuminate all the border regions that confine upon the circle of our present knowledge; and so spreading further and

further should presently disclose and bring into sight all that is most hidden and secret in the world — that man (I thought) would be the benefactor indeed of the human race — the propagator of man's empire over the universe, the champion of liberty, the conqueror and subduer of necessities.

"For myself, I found that I was fitted for nothing so well as for the study of Truth; as having a mind nimble and versatile enough to catch the resemblances of things (which is the chief point), and at the same time steady enough to fix and distinguish their subtler differences; as being gifted by nature with desire to seek, patience to doubt, fondness to meditate, slowness to assert, readiness to reconsider, carefulness to dispose and set in order; and as being a man that neither affects what is new nor admires what is old, and that hates every kind of imposture. So I thought my nature had a kind of familiarity and relationship with Truth.

"Nevertheless, because my birth and education had seasoned me in business of State; and because opinions (so young as I was) would sometimes stagger me; and because I thought that a man's own country has some special claims upon him more than the rest of the world; and because I hoped that, if I rose to any place of honour in the State, I should have a larger command of industry and ability to help me in my work — for these reasons I both applied myself to acquire the arts of civil life, and commended my service, so far as in modesty and honesty I might, to the favour of such friends as had any influence. In which also I had another motive: for I felt that those things I have spoken of — be they great or small — reach no further than the condition and culture of this mortal life; and I was not without hope (the condition of religion being at that time not very prosperous) that if I came to hold office in the State, I might get something done too for the good of men's souls. When I found, however, that my zeal was mistaken for ambition, and my life had already readied the turning-point, and my breaking health reminded me how ill I could afford to be so slow, and I reflected, moreover, that in leaving undone the good that I could do by myself alone, and applying myself to that which could not be done without the help and consent of others, I was by no means discharging the duty that lay upon me — I

put all those thoughts aside, and (in pursuance of my old determination) betook myself wholly to this work. Nor am I discouraged from it because I see signs in the times of the decline and overthrow of that knowledge and erudition which is now in use. Not that I apprehend any more barbarian invasions (unless possibly the Spanish empire should recover its strength, and having crushed other nations by arms should itself sink under its own weight); but the civil wars which may be expected, I think (judging from certain fashions which have come in of late), to spread through many countries — together with the malignity of sects, and those compendious artifices and devices which have crept into the place of solid erudition — seem to portend for literature and the sciences a tempest not less fatal, and one against which the Printing-office will be no effectual security. And no doubt but that fair-weather learning which is nursed by leisure, blossoms under reward and praise, which cannot withstand the shock of opinion, and is liable to be abused by tricks and quackery, will sink under such impediments as these. Far otherwise is it with that knowledge whose dignity is maintained by works of utility and power. For the injuries, therefore, which should proceed from the times, I am not afraid of them; and for the injuries which proceed from men, I am not concerned. For if any one charge me with seeking to be wise over-much, I answer simply that modesty and civil respect are fit for civil matters; in contemplations nothing is to be respected but Truth. If any one call on me for *works*, and that presently, I tell him frankly, without any imposture at all, that for me — a man not old, of weak health, my hands full of civil business, entering without guide or light upon an argument of all others the most obscure — I hold it enough to have constructed the machine, though I may not succeed in setting it on work.... If, again, any one ask me, not indeed for actual works, yet for definite premises and forecasts of the works that are to be, I would have him know that the knowledge which we now possess will not teach a man even what to *wish*. Lastly — though this is a matter of less moment — if any of our politicians, who used to make their calculations and conjectures according to persons and precedents, must needs interpose his judgment in a thing of this nature, I would but remind him how (according to the ancient fable) the lame man keeping the

course won the race of the swift man who left it; and that there is no thought to be taken about precedents, for the thing is without precedent.

"For myself, my heart is not set upon any of those things which depend upon external accidents. I am not hunting for fame: I have no desire to found a sect, after the fashion of heresiarchs; and to look for any private gain from such an undertaking as this I count both ridiculous and base. Enough for me the consciousness of well-deserving, and those real and effectual results with which Fortune itself cannot interfere."

In 1604 James's first Parliament met, and with it Bacon returned to an industrious public life, which was not to be interrupted till it finally came to an end with his strange and irretrievable fall. The opportunity had come; and Bacon, patient, vigilant, and conscious of great powers and indefatigable energy, fully aware of all the conditions of the time, pushed at once to the front in the House of Commons. He lost no time in showing that he meant to make himself felt. The House of Commons had no sooner met than it was involved in a contest with the Chancery, with the Lords, and finally with the King himself, about its privileges — in this case its exclusive right to judge of the returns of its members. Bacon's time was come for showing the King both that he was willing to do him service, and that he was worth being employed. He took a leading part in the discussions, and was trusted by the House as their spokesman and reporter in the various conferences. The King, in his overweening confidence in his absolute prerogative, had, indeed, got himself into serious difficulty; for the privilege was one which it was impossible for the Commons to give up. But Bacon led the House to agree to an arrangement which saved their rights; and under a cloud of words of extravagant flattery he put the King in good-humour, and elicited from him the spontaneous proposal of a compromise which ended a very dangerous dispute. "The King's voice," said Bacon, in his report to the House, "was the voice of God in man, the good spirit of God in the mouth of man; I do not say the voice of God and not of man; I am not one of Herod's flatterers; a curse fell upon him that said it, a curse on him that suffered it. We

might say, as was said to Solomon, We are glad, O King, that we give account to you, because you discern what is spoken."

The course of this Parliament, in which Bacon was active and prominent, showed the King, probably for the first time, what Bacon was. The session was not so stormy as some of the later ones; but occasions arose which revealed to the King and to the House of Commons the deeply discordant assumptions and purposes by which each party was influenced, and which brought out Bacon's powers of adjusting difficulties and harmonising claims. He never wavered in his loyalty to his own House, where it is clear that his authority was great. But there was no limit to the submission and reverence which he expressed to the King, and, indeed, to his desire to bring about what the King desired, as far as it could be safely done. Dealing with the Commons, his policy was "to be content with the substance and not to stand on the form." Dealing with the King, he was forward to recognise all that James wanted recognised of his kingcraft and his absolute sovereignty. Bacon assailed with a force and keenness which showed what he could do as an opponent, the amazing and intolerable grievances arising out of the survival of such feudal customs as Wardship and Purveyance; customs which made over a man's eldest son and property, during a minority, to the keeping of the King, that is, to a King's favourite, and allowed the King's servants to cut down a man's timber before the windows of his house. But he urged that these grievances should be taken away with the utmost tenderness for the King's honour and the King's purse. In the great and troublesome questions relating to the Union he took care to be fully prepared. He was equally strong on points of certain and substantial importance, equally quick to suggest accommodations where nothing substantial was touched. His attitude was one of friendly and respectful independence. It was not misunderstood by the King. Bacon, who had hitherto been an unsworn and unpaid member of the Learned Counsel, now received his office by patent, with a small salary, and he was charged with the grave business of preparing the work for the Commissioners for the Union of the Kingdoms, in which, when the Commission met, he took a foremost and successful part.

But the Parliament before which their report was to be laid did not meet till ten months after the work of the Commission was done (Dec., 1604 — Nov., 1605). For nearly another year Bacon had no public work. The leisure was used for his own objects. He was interested in history in a degree only second to his interest in nature; indeed, but for the engrossing claims of his philosophy of nature, he might have been the first and one of the greatest of our historians. He addressed a letter to the Chancellor Ellesmere on the deficiencies of British history, and on the opportunities which offered for supplying them. He himself could at present do nothing; "but because there be so many good painters, both for hand and colours, it needeth but encouragement and instructions to give life and light unto it." But he mistook, in this as in other instances, the way in which such things are done. Men do not accomplish such things to order, but because their souls compel them, as he himself was building up his great philosophical structure, in the midst of his ambition and disappointment. And this interval of quiet enabled him to bring out his first public appeal on the subject which most filled his mind. He completed in English the *Two Books of the Advancement of Knowledge*, which were published at a book-shop at the gateway of Gray's Inn in Holborn (Oct., 1605). He intended that it should be published in Latin also; but he was dissatisfied with the ornate translation sent him from Cambridge, and probably he was in a hurry to get the book out. It was dedicated to the King, not merely by way of compliment, but with the serious hope that his interest might be awakened in the subjects which were nearest Bacon's heart. Like other of Bacon's hopes, it was disappointed. The King's studies and the King's humours were not of the kind to make him care for Bacon's visions of the future, or his eager desire to begin at once a novel method of investigating the facts and laws of nature; and the appeal to him fell dead. Bacon sent the book about to his friends with explanatory letters. To Sir T. Bodley he writes:

"I think no man may more truly say with the Psalm, *Multum incola fuit anima mea* [Ps. 120] than myself. For I do confess since I was of any understanding, my mind hath in effect been absent from that I have done; and in absence are many errors which I willingly acknowledge; and among them, this great one

which led the rest: that knowing myself by inward calling to be fitter to hold a book than to play a part, I have led my life in civil causes, for which I was not very fit by nature, and more unfit by the preoccupation of my mind. Therefore, calling myself home, I have now enjoyed myself; whereof likewise I desire to make the world partaker."

To Lord Salisbury, in a note of elaborate compliment, he describes his purpose by an image which he repeats more than once. "I shall content myself to awake better spirits, *like a bell-ringer, which is first up to call others to church*." But the two friends whose judgment he chiefly valued, and who, as on other occasions, were taken into his most intimate literary confidence, were Bishop Andrewes, his "inquisitor," and Toby Matthews, a son of the Archbishop of York, who had become a Roman Catholic, and lived in Italy, seeing a good deal of learned men there, apparently the most trusted of all Bacon's friends.

When Parliament met again in November, 1605, the Gunpowder Plot and its consequences filled all minds. Bacon was not employed about it by Government, and his work in the House was confined to carrying on matters left unfinished from the previous session. On the rumour of legal promotions and vacancies Bacon once more applied to Salisbury for the Solicitorship (March, 1606). But no changes were made, and Bacon was "still next the door." In May, 1606, he did what had for some time been in his thoughts: he married; not the lady whom Essex had tried to win for him, that Lady Hatton who became the wife of his rival Coke, but one whom Salisbury helped him to gain, an alderman's daughter, Alice Barnham, "an handsome maiden," with some money and a disagreeable mother, by her second marriage, Lady Packington. Bacon's curious love of pomp amused the gossips of the day. "Sir Francis Bacon," writes Carleton to Chamberlain, "was married yesterday to his young wench, in Maribone Chapel. He was clad from top to toe in purple, and hath made himself and his wife such store of raiments of cloth of silver and gold that it draws deep into her portion." Of his married life we hear next to nothing: in his *Essay on Marriage* he is not enthusiastic in its praise; almost the only thing we know is that in his will, twenty years afterwards, he showed his dissatisfaction with his wife, who after

his death married again. But it gave him an additional reason, and an additional plea, for pressing for preferment, and in the summer of 1606 the opening came. Coke was made Chief-Justice of the Common Pleas, leaving the Attorney's place vacant. A favourite of Salisbury's, Hobart, became Attorney, and Bacon hoped for some arrangement by which the Solicitor Doddridge might be otherwise provided for, and he himself become Solicitor. Hopeful as he was, and patient of disappointments, and of what other men would have thought injustice and faithlessness, he felt keenly both the disgrace and the inconvenience of so often expecting place, and being so often passed over. While the question was pending, he wrote to the King, the Chancellor, and Salisbury. His letter to the King is a record in his own words of his public services. To the Chancellor, whom he believed to be his supporter, he represented the discredit which he suffered — he was a common gaze and a speech;" "the little reputation which by his industry he gathered, being scattered and taken away by continual disgraces, *every new man coming above me*;" and his wife and his wife's friends were making him feel it. The letters show what Bacon thought to be his claims, and how hard he found it to get them recognised. To the Chancellor he urged, among other things, that time was slipping by —

"I humbly pray your Lordship to consider that time groweth precious with me, and that a married man is seven years elder in his thoughts the first day.... And were it not to satisfy my wife's friends, and to get myself out of being a common gaze and a speech, I protest before God I would never speak word for it. But to conclude, as my honourable Lady your wife was some mean to make me to change the name of another, so if it please you to help me to change my own name, I can be but more and more bounden to you; and I am much deceived if your Lordship find not the King well inclined, and my Lord of Salisbury forward and affectionate."

To Salisbury he writes:

"I may say to your Lordship, in the confidence of your poor kinsman, and of a man by you advanced, *Tu idem fer opem, qui spem dedisti*; for I am sure it was not possible for any living man to have received from another more significant

and comfortable words of hope; your Lordship being pleased to tell me, during the course of my last service, that you would raise me; and that when you had resolved to raise a man, you were more careful of him than himself; and that what you had done for me in my marriage was a benefit to me, but of no use to your Lordship.... And I know, and all the world knoweth, that your Lordship is no dealer of holy water, but noble and real; and on my part I am of a sure ground that I have committed nothing that may deserve alteration. And therefore my hope is your Lordship will finish a good work, and consider that time groweth precious with me, and that I am now *vergentibus annis*. And although I know your fortune is not to need an hundred such as I am, yet I shall be ever ready to give you my best and first fruits, and to supply (as much as in me lieth) worthiness by thankfulness."

Still the powers were deaf to his appeals; at any rate he had to be content with another promise. Considering the ability which he had shown in Parliament, the wisdom and zeal with which he had supported the Government, and the important position which he held in the House of Commons, the neglect of him is unintelligible, except on two suppositions: that the Government, that is Cecil, were afraid of anything but the mere routine of law, as represented by such men as Hobart and Doddridge; or that Coke's hostility to him was unabated, and Coke still too important to be offended.

Bacon returned to work when the Parliament met, November, 1606. The questions arising out of the Union, the question of naturalisation, its grounds and limits, the position of Scotchmen born *before* or *since* the King's accession, the *Antenati* and *Postnati*, the question of a union of laws, with its consequences, were discussed with great keenness and much jealous feeling. On the question of naturalisation Bacon took the liberal and larger view. The immediate union of laws he opposed as premature. He was a willing servant of the House, and the House readily made use of him. He reported the result of conferences, even when his own opinion was adverse to that of the House. And he reported the speeches of such persons as Lord Salisbury, probably throwing into them both

form and matter of his own. At length, “silently, on the 25th of June,” 1607, he was appointed Solicitor-General. He was then forty-seven.

“It was also probably about this time,” writes Mr. Spedding, “that Bacon finally settled the plan of his ‘*Great Instauration*,’ and began to call it by that name.”

CHAPTER IV.

BACON SOLICITOR-GENERAL.

The great thinker and idealist, the great seer of a world of knowledge to which the men of his own generation were blind, and which they could not, even with his help, imagine a possible one, had now won the first step in that long and toilsome ascent to success in life, in which for fourteen years he had been baffled. He had made himself, for good and for evil, a servant of the Government of James I. He was prepared to discharge with zeal and care all his duties. He was prepared to perform all the services which that Government might claim from its servants. He had sought, he had passionately pressed to be admitted within that circle in which the will of the King was the supreme law; after that, it would have been ruin to have withdrawn or resisted. But it does not appear that the thought or wish to resist or withdraw ever presented itself; he had thoroughly convinced himself that in doing what the King required he was doing the part of a good citizen, and a faithful servant of the State and Commonwealth. The two lives, the two currents of purpose and effort, were still there. Behind all the wrangle of the courts and the devising of questionable legal subtleties to support some unconstitutional encroachment, or to outflank the defence of some obnoxious prisoner, the high philosophical meditations still went on; the remembrance of their sweetness and grandeur wrung more than once from the jaded lawyer or the baffled counsellor the complaint, in words which had a great charm for him, *Multum incola fuit anima mea*— "My soul hath long dwelt" where it would not be. But opinion and ambition and the immense convenience of being great and rich and powerful, and the supposed necessities of his condition, were too strong even for his longings to be the interpreter and the servant of nature. There is no trace of the faintest reluctance on his part to be the willing minister of a court of which not only the principal figure, but the arbiter and governing spirit, was to be George Villiers, Duke of Buckingham.

The first leisure that Bacon had after he was appointed Solicitor he used in a characteristic way. He sat down to make a minute stock-taking of his position and its circumstances. In the summer of 1608 he devoted a week of July to this survey of his life, its objects and its appliances; and he jotted down, day by day, through the week, from his present reflections, or he transcribed from former note-books, a series of notes in loose order, mostly very rough and not always intelligible, about everything that could now concern him. This curious and intimate record, which he called *Commentarius Solutus*, was discovered by Mr. Spedding, who not unnaturally had some misgivings about publishing so secret and so ambiguous a record of a man's most private confidences with himself. But there it was, and, as it was known, he no doubt decided wisely in publishing it as it stands; he has done his best to make it intelligible, and he has also done his best to remove any unfavourable impressions that might arise from it. It is singularly interesting as an evidence of Bacon's way of working, of his watchfulness, his industry, his care in preparing himself long beforehand for possible occasions, his readiness to take any amount of trouble about his present duties, his self-reliant desire for more important and difficult ones. It exhibits his habit of self-observation and self-correction, his care to mend his natural defects of voice, manner, and delivery; it is even more curious in showing him watching his own physical constitution and health, in the most minute details of symptoms and remedies, equally with a scientific and a practical object. It contains his estimate of his income, his expenditure, his debts, schedules of lands and jewels, his rules for the economy of his estate, his plans for his new gardens and terraces and ponds and buildings at Gorhambury. He was now a rich man, valuing his property at £24,155 and his income at £4975, burdened with a considerable debt, but not more than he might easily look to wipe out. But, besides all these points, there appear the two large interests of his life — the reform of philosophy, and his ideal of a great national policy. The "greatness of Britain" was one of his favourite subjects of meditation. He puts down in his notes the outline of what should be aimed at to secure and increase it; it is to make the various forces of the great and growing empire work together in harmonious order, without waste,

without jealousy, without encroachment and collision; to unite not only the interests but the sympathies and aims of the Crown with those of the people and Parliament; and so to make Britain, now in peril from nothing but from the strength of its own discordant elements, that "Monarchy of the West" in reality, which Spain was in show, and, as Bacon always maintained, only in show. The survey of the condition of his philosophical enterprise takes more space. He notes the stages and points to which his plans have reached; he indicates, with a favourite quotation or apophthegm— "*Plus ultra*"— "*ausus vana contemnere*"— "*aditus non nisi sub persona infantis*" soon to be familiar to the world in his published writings — the lines of argument, sometimes alternative ones, which were before him; he draws out schemes of inquiry, specimen tables, distinctions and classifications about the subject of Motion, in English interlarded with Latin, or in Latin interlarded with English, of his characteristic and practical sort; he notes the various sources from which he might look for help and co-operation— "of learned men beyond the seas"— "to begin first in France to print it"— "laying for a place to command wits and pens;" he has his eye on rich and childless bishops, on the enforced idleness of State prisoners in the Tower, like Northumberland and Raleigh, on the great schools and universities, where he might perhaps get hold of some college for "Inventors" — as we should say, for the endowment of research. These matters fill up a large space of his notes. But his thoughts were also busy about his own advancement. And to these sheets of miscellaneous memoranda Bacon confided not only his occupations and his philosophical and political ideas, but, with a curious innocent unreserve, the arts and methods which he proposed to use in order to win the favour of the great and to pull down the reputation of his rivals. He puts down in detail how he is to recommend himself to the King and the King's favourites —

"To set on foot and maintain access with his Majesty, Dean of the Chapel, May, Murray. Keeping a course of access at the beginning of every term and vacation, with a memorial. To attend some time his repasts, or to fall into a course of familiar discourse. To find means to win a conceit, not open, but

private, of being affectionate and assured to the Scotch, and fit to succeed Salisbury in his manage in that kind; Lord Dunbar, Duke of Lennox, and Daubiny: secret."

Then, again, of Salisbury —

"Insinuate myself to become privy to my Lord of Salisbury's estate." "To correspond with Salisbury in a habit of natural but no ways perilous boldness, and in vivacity, invention, care to cast and enterprise (but with due caution), for this manner I judge both in his nature freeth the stands, and in his ends pleaseth him best, and promiseth more use of me. I judge my standing out, and not favoured by Northampton, must needs do me good with Salisbury, especially comparative to the Attorney."

The Attorney Hobart filled the place to which Bacon had so long aspired, and which he thought, perhaps reasonably, that he could fill much better. At any rate, one of the points to which he recurs frequently in his notes is to exhort himself to make his own service a continual contrast to the Attorney's— "to have in mind and use the Attorney's weakness," enumerating a list of instances: "Too full of cases and distinctions. Nibbling solemnly, he distinguisheth but apprehends not;" "No gift with his pen in proclamations and the like;" and at last he draws out in a series of epigrams his view of "Hubbard's disadvantages" —

"Better at shift than at drift.... *Subtilitas sine acrimonia*.... No power with the judge.... He will alter a thing but not mend.... He puts into patents and deeds words not of law but of common sense and discourse.... Sociable save in profit.... He doth depopulate mine office; otherwise called inclose.... I never knew any one of so good a speech with a worse pen." ...

Then in a marginal note— "Solemn goose. Stately, leastwise nodd (?) crafty. They have made him believe that he is wondrous wise." And, finally, he draws up a paper of counsels and rules for his own conduct— "*Custumæ aptæ ad Individuum*" — which might supply an outline for an essay on the arts of behaviour proper for a rising official, a sequel to the biting irony of the essays on *Cunning* and *Wisdom for a Man's Self*.

“To furnish my L. of S. with ornaments for public speeches. To make him think how he should be reverenced by a Lord Chancellor, if I were; Princelike.

“To prepare him for matters to be handled in Council or before the King aforehand, and to show him and yield him the fruits of my care.

“To take notes in tables, when I attend the Council, and sometimes to move out of a memorial shewed and seen. To have particular occasions, fit and graceful and continual, to maintain private speech with every the great persons, and sometimes drawing more than one together. *Ex imitatione Att.* This specially in public places, and without care or affectation. At Council table to make good my L. of Salisb. motions and speeches, and for the rest sometimes one sometimes another; chiefly his, that is most earnest and in affection.

“To suppress at once my speaking, with panting and labour of breath and voice. Not to fall upon the main too sudden, but to induce and intermingle speech of good fashion. To use at once upon entrance given of speech, though abrupt, to compose and draw in myself. To free myself at once from payt. (?) of formality and compliment, though with some show of carelessness, pride, and rudeness.”

(And then follows a long list of matters of business to be attended to.)

These arts of a court were not new; it was not new for men to observe them in their neighbours and rivals. What was new was the writing them down, with deliberate candour, among a man’s private memoranda, as things to be done and with the intention of practising them. This of itself, it has been suggested, shows that they were unfamiliar and uncongenial to Bacon; for a man reminds himself of what he is apt to forget. But a man reminds himself also of what seems to him, at the moment, most important, and what he lays most stress upon. And it is clear that these are the rules, rhetorical and ethical, which Bacon laid down for himself in pursuing the second great object of his life — his official advancement; and that, whatever we think of them, they were the means which he deliberately approved.

As long as Salisbury lived, the distrust which had kept Bacon so long in the shade kept him at a distance from the King’s ear, and from influence on his

counsels. Salisbury was the one Englishman in whom the King had become accustomed to confide, in his own conscious strangeness to English ways and real dislike and suspicion of them; Salisbury had an authority which no one else had, both from his relations with James at the end of Elizabeth's reign, and as the representative of her policy and the depositary of its traditions; and if he had lived, things might not, perhaps, have been better in James's government, but many things, probably, would have been different. But while Salisbury was supreme, Bacon, though very alert and zealous, was mainly busied with his official work; and the Solicitor's place had become, as he says, a "mean thing" compared with the Attorney's, and also an extremely laborious place— "one of the painfullest places in the kingdom." Much of it was routine, but responsible and fatiguing routine. But if he was not in Salisbury's confidence, he was prominent in the House of Commons. The great and pressing subject of the time was the increasing difficulties of the revenue, created partly by the inevitable changes of a growing state, but much more by the King's incorrigible wastefulness. It was impossible to realise completely the great dream and longing of the Stuart kings and their ministers to make the Crown independent of parliamentary supplies; but to dispense with these supplies as much as possible, and to make as much as possible of the revenue permanent, was the continued and fatal policy of the Court. The "Great Contract" — a scheme by which, in return for the surrender by the Crown of certain burdensome and dangerous claims of the Prerogative, the Commons were to assure a large compensating yearly income to the Crown — was Salisbury's favourite device during the last two years of his life. It was not a prosperous one. The bargain was an ill-imagined and not very decorous transaction between the King and his people. Both parties were naturally jealous of one another, suspicious of underhand dealing and tacit changes of terms, prompt to resent and take offence, and not easy to pacify when they thought advantage had been taken; and Salisbury, either by his own fault, or by yielding to the King's canny shiftiness, gave the business a more haggling and huckstering look than it need have had. Bacon, a subordinate of the Government, but a very important person in the Commons,

did his part, loyally, as it seems, and skilfully in smoothing differences and keeping awkward questions from making their appearance. Thus he tried to stave off the risk of bringing definitely to a point the King's cherished claim to levy "impositions," or custom duties, on merchandise, by virtue of his prerogative — a claim which he warned the Commons not to dispute, and which Bacon, maintaining it as legal in theory, did his best to prevent them from discussing, and to persuade them to be content with restraining. Whatever he thought of the "Great Contract," he did what was expected of him in trying to gain for it fair play. But he made time for other things also. He advised, and advised soundly, on the plantation and finance of Ireland. It was a subject in which he took deep interest. A few years later, with only too sure a foresight, he gave the warning, "lest Ireland civil become more dangerous to us than Ireland savage." He advised — not soundly in point of law, but curiously in accordance with modern notions — about endowments; though, in this instance, in the famous will case of Thomas Sutton, the founder of the Charter House, his argument probably covered the scheme of a monstrous job in favour of the needy Court. And his own work went on in spite of the pressure of the Solicitor's place. To the first years of his official life belong three very interesting fragments, intended to find a provisional place in the plan of the "Great Instauration." To his friend Toby Matthews, at Florence, he sent in manuscript the great attack on the old teachers of knowledge, which is perhaps the most brilliant, and also the most insolently unjust and unthinking piece of rhetoric ever composed by him — the *Redargutio Philosophiarum*.

"I send you at this time the only part which hath any harshness; and yet I framed to myself an opinion, that whosoever allowed well of that preface which you so much commend, will not dislike, or at least ought not to dislike, this other speech of preparation; for it is written out of the same spirit, and out of the same necessity. Nay it doth more fully lay open that the question between me and the ancients is not of the virtue of the race, but of the rightness of the way. And to speak truth, it is to the other but as *palma* to *pugnus*, part of the same thing more large.... Myself am like the miller of Huntingdon, that was wont to pray for

peace amongst the willows; for while the winds blew, the wind-mills wrought, and the water-mill was less customed. So I see that controversies of religion must hinder the advancement of sciences. Let me conclude with my perpetual wish towards yourself, that the approbation of yourself by your own discreet and temperate carriage, may restore you to your country, and your friends to your society. And so I commend you to God's goodness.

"Gray's Inn, this 10th of October, 1609."

To Bishop Andrewes he sent, also in manuscript, another piece, belonging to the same plan — the deeply impressive treatise called *Visa et Cogitata* — what Francis Bacon had seen of nature and knowledge, and what he had come by meditation to think of what he had seen. The letter is not less interesting than the last, in respect to the writer's purposes, his manner of writing, and his relations to his correspondent.

"MY VERY GOOD LORD, — Now your Lordship hath been so long in the church and the palace disputing between kings and popes, methinks you should take pleasure to look into the field, and refresh your mind with some matter of philosophy, though that science be now through age waxed a child again, and left to boys and young men; and because you were wont to make me believe you took liking to my writings, I send you some of this vacation's fruits, and thus much more of my mind and purpose. I hasten not to publish; perishing I would prevent. And I am forced to respect as well my times as the matter. For with me it is thus, and I think with all men in my case, if I bind myself to an argument, it loadeth my mind; but if I rid my mind of the present cogitation, it is rather a recreation. This hath put me into these miscellanies, which I purpose to suppress, if God give me leave to write a just and perfect volume of philosophy, which I go on with, though slowly. I send not your Lordship too much, lest it may glut you. Now let me tell you what my desire is. If your Lordship be so good now as when you were the good Dean of Westminster, my request to you is, that not by pricks, but by notes, you would mark unto me whatsoever shall seem unto you either not current in the style, or harsh to credit and opinion, or inconvenient for the person of the writer; for no man can be judge and party, and when our minds

judge by reflection of ourselves, they are more subject to error. And though for the matter itself my judgement be in some things fixed, and not accessible by any man's judgement that goeth not my way, yet even in those things the admonition of a friend may make me express myself diversly. I would have come to your Lordship, but that I am hastening to my house in the country. And so I commend your Lordship to God's goodness."

There was yet another production of this time, of which we have a notice from himself in a letter to Toby Matthews, the curious and ingenious little treatise on the *Wisdom of the Ancients*, "one of the most popular of his works," says Mr. Spedding, "in his own and in the next generation," but of value to us mainly for its quaint poetical colour, and the unexpected turns, like answers to a riddle, given to the ancient fables. When this work was published, it was the third time that he had appeared as an author in print. He thus writes about it and himself:

"MR. MATTHEWS, — I do heartily thank you for your letter of the 24th of August from Salamanca; and in recompense thereof I send you a little work of mine that hath begun to pass the world. They tell me my Latin is turned into silver, and become current. Had you been here, you should have been my inquisitor before it came forth; but I think the greatest inquisitor in Spain will allow it.... My great work goeth forward, and, after my manner, I alter ever when I add. So that nothing is finished till all be finished.

"From Gray's Inn, the 17th of February, 1610."

In the autumn of 1611 the Attorney-General was ill, and Bacon reminded both the King and Salisbury of his claim. He was afraid, he writes to the King, with an odd forgetfulness of the persistency and earnestness of his applications, "that *by reason of my slowness to sue*, and apprehend occasions upon the sudden, keeping one plain course of painful service, I may *in fine dierum* be in danger to be neglected and forgotten." The Attorney recovered, but Bacon, on New Year's Tide of 1611/12, wrote to Salisbury to thank him for his good-will. It is the last letter of Bacon's to Salisbury which has come down to us.

“IT MAY PLEASE YOUR GOOD LORDSHIP, — I would entreat the new year to answer for the old, in my humble thanks to your Lordship, both for many your favours, and chiefly that upon the occasion of Mr. Attorney’s infirmity I found your Lordship even as I would wish. This doth increase a desire in me to express my thankful mind to your Lordship; hoping that though I find age and decays grow upon me, yet I may have a flash or two of spirit left to do you service. And I do protest before God, without compliment or any light vein of mind, that if I knew in what course of life to do you best service, I would take it, and make my thoughts, which now fly to many pieces, be reduced to that center. But all this is no more than I am, which is not much, but yet the entire of him that is—”

In the following May (May 24, 1612) Salisbury died. From this date James passed from government by a minister, who, whatever may have been his faults, was laborious, public-spirited, and a statesman, into his own keeping and into the hands of favourites, who cared only for themselves. With Cecil ceased the traditions of the days of Elizabeth and Burghley, in many ways evil and cruel traditions, but not ignoble and sordid ones; and James was left without the stay, and also without the check, which Cecil’s power had been to him. The field was open for new men and new ways; the fashions and ideas of the time had altered during the last ten years, and those of the Queen’s days had gone out of date. Would the new turn out for the better or the worse? Bacon, at any rate, saw the significance of the change and the critical eventfulness of the moment. It was his habit of old to send memorials of advice to the heads of the Government, apparently without such suggestions seeming more intrusive or officious than a leading article seems now, and perhaps with much the same effect. It was now a time to do so, if ever; and he was in an official relation to the King which entitled him to proffer advice. He at once prepared to lay his thoughts before the King, and to suggest that he could do far better service than Cecil, and was ready to take his place. The policy of the “Great Contract” had certainly broken down, and the King, under Cecil’s guidance, had certainly not known how to manage an English parliament. In writing to the King he found it hard to satisfy himself.

Several draft letters remain, and it is not certain which of them, if any, was sent. But immediately on Salisbury's death he began, May 29th, a letter in which he said that he had never yet been able to show his affection to the King, "having been as a hawk tied to another's fist;" and if, "as was said to one that spake great words, *Amice, verba tua desiderant civitatem*, your Majesty say to me, *Bacon, your words require a place to speak them*," yet that "place or not place" was with the King. But the draft breaks off abruptly, and with the date of the 31st we have the following:

"Your Majesty hath lost a great subject and a great servant. But if I should praise him in propriety, I should say that he was a fit man to keep things from growing worse, but no very fit man to reduce things to be much better. For he loved to have the eyes of all Israel a little too much upon himself, and to have all business still under the hammer, and like clay in the hands of the potter, to mould it as he thought good; so that he was more *in operatione* than *in opere*. And though he had fine passages of action, yet the real conclusions came slowly on. So that although your Majesty hath grave counsellors and worthy persons left, yet you do as it were turn a leaf, wherein if your Majesty shall give a frame and constitution to matters, before you place the persons, in my simple opinion it were not amiss. But the great matter and most instant for the present, is the consideration of a Parliament, for two effects: the one for the supply of your estate, the other for the better knitting of the hearts of your subjects unto your Majesty, according to your infinite merit; for both which, Parliaments have been and are the antient and honourable remedy.

"Now because I take myself to have a little skill in that region, as one that ever affected that your Majesty mought in all your causes not only prevail, but prevail with satisfaction of the inner man; and though no man can say but I was a perfect and peremptory royalist, yet every man makes me believe that I was never one hour out of credit with the Lower House; my desire is to know whether your Majesty will give me leave to meditate and propound unto you some preparative remembrances touching the future Parliament."

Whether he sent this or not, he prepared another draft. What had happened in the mean while we know not, but Bacon was in a bitter mood, and the letter reveals, for the first time, what was really in Bacon's heart about the "great subject and great servant," of whom he had just written so respectfully, and with whom he had been so closely connected for most of his life. The fierceness which had been gathering for years of neglect and hindrance under that placid and patient exterior broke out. He offered himself as Cecil's successor in business of State. He gave his reason for being hopeful of success. Cecil's bitterest enemy could not have given it more bitterly.

"My principal end being to do your Majesty service, I crave leave to make at this time to your Majesty this most humble oblation of myself. I may truly say with the psalm, *Multum incola fuit anima mea*, for my life hath been conversant in things wherein I take little pleasure. Your Majesty may have heard somewhat that my father was an honest man, and somewhat you may have seen of myself, though not to make any true judgement by, because I have hitherto had only *potestatem verborum*, nor that neither. I was three of my young years bred with an ambassador in France, and since I have been an old truant in the school-house of your council-chamber, though on the second form, yet longer than any that now sitteth hath been upon the head form. If your Majesty find any aptness in me, or if you find any scarcity in others, whereby you may think it fit for your service to remove me to business of State, although I have a fair way before me for profit (and by your Majesty's grace and favour for honour and advancement), and in a course less exposed to the blasts of fortune, *yet now that he is gone, quo vivente virtutibus certissimum exitium*, I will be ready as a chessman to be wherever your Majesty's royal hand shall set me. Your Majesty will bear me witness, I have not suddenly opened myself thus far. I have looked upon others, I see the exceptions, I see the distractions, and I fear Tacitus will be a prophet, *magis alii homines quam alii mores*. I know mine own heart, and I know not whether God that hath touched my heart with the affection may not touch your royal heart to discern it. Howsoever, I shall at least go on honestly in mine ordinary course, and supply the rest in prayers for you, remaining, etc."

This is no hasty outburst. In a later paper on the true way of retrieving the disorders of the King's finances, full of large and wise counsel, after advising the King not to be impatient, and assuring him that a state of debt is not so intolerable— "for it is no new thing for the greatest Kings to be in debt," and all the great men of the Court had been in debt without any "manner of diminution of their greatness" — he returns to the charge in detail against Salisbury and the Great Contract.

"My second prayer is, that your Majesty — in respect to the hasty freeing of your state — would not descend to any means, or degree of means, which carrieth not a symmetry with your Majesty and greatness. *He is gone from whom those courses did wholly flow.* To have your wants and necessities in particular as it were hanged up in two tablets before the eyes of your lords and commons, to be talked of for four months together; To have all your courses to help yourself in revenue or profit put into printed books, which were wont to be held *arcana imperii*; To have such worms of aldermen to lend for ten in the hundred upon good assurance, and with such entreaty (?) as if it should save the bark of your fortune; To contract still where mought be had the readiest payment, and not the best bargain; To stir a number of projects for your profit, and then to blast them, and leave your Majesty nothing but the scandal of them; To pretend even carriage between your Majesty's rights and ease of the people, and to satisfy neither. These courses and others the like I hope are gone with the deviser of them; which have turned your Majesty to inestimable prejudice."

And what he thought of saying, but on further consideration struck out, was the following. It is no wonder that he struck it out, but it shows what he felt towards Cecil.

"I protest to God, though I be not superstitious, when I saw your M.'s book against Vorstius and Arminius, and noted your zeal to deliver the majesty of God from the vain and indign comprehensions of heresy and degenerate philosophy, as you had by your pen formerly endeavoured to deliver kings from the usurpation of Rome, *perculsit illico animum* that God would set shortly upon

you some visible favour, *and let me not live if I thought not of the taking away of that man*."

And from this time onwards he scarcely ever mentions Cecil's name in his correspondence with James but with words of condemnation, which imply that Cecil's mischievous policy was the result of private ends. Yet this was the man to whom he had written the "New Year's Tide" letter six months before; a letter which is but an echo to the last of all that he had been accustomed to write to Cecil when asking assistance or offering congratulation. Cecil had, indeed, little claim on Bacon's gratitude; he had spoken him fair in public, and no doubt in secret distrusted and thwarted him. But to the last Bacon did not choose to acknowledge this. Had James disclosed something of his dead servant, who left some strange secrets behind him, which showed his unsuspected hostility to Bacon? Except on this supposition (but there is nothing to support it), no exaggeration of the liberty allowed to the language of compliment is enough to clear Bacon of an insincerity which is almost inconceivable in any but the meanest tools of power.

"I assure myself," wrote Bacon to the King, "your Majesty taketh not me for one of a busy nature; for my estate being free from all difficulties, and I having such a large field for contemplation, as I have partly and shall much more make manifest unto your Majesty and the world, to occupy my thoughts, nothing could make me active but love and affection." So Bacon described his position with questionable accuracy — for his estate was not "free from difficulties" — in the new time coming. He was still kept out of the inner circle of the Council; but from the moment of Salisbury's death he became a much more important person. He still sued for advancement, and still met with disappointment; the "mean men" still rose above him. The lucrative place of Master of the Wards was vacated by Salisbury's death. Bacon was talked of for it, and probably expected it, for he drew up new rules for it, and a speech for the new master; but the office and the speech went to Sir George Carey. Soon after Sir George Carey died. Bacon then applied for it through the new favourite, Rochester. "He was so confident of the place that he put most of his men into new cloaks;" and the

world of the day amused itself at his disappointment, when the place was given to another "mean man," Sir Walter Cope, of whom the gossips wrote that if the "last two Treasurers could look out of their graves to see those successors in that place, they would be out of countenance with themselves, and say to the world *quantum mutatus*." But Bacon's hand and counsel appear more and more in important matters — the improvement of the revenue; the defence of extreme rights of the prerogative in the case against Whitelocke; the great question of calling a parliament, and of the true and "princely" way of dealing with it. His confidential advice to the King about calling a parliament was marked by his keen perception of the facts of the situation; it was marked too by his confident reliance on skilful indirect methods and trust in the look of things; it bears traces also of his bitter feeling against Salisbury, whom he charges with treacherously fomenting the opposition of the last Parliament. There was no want of worldly wisdom in it; certainly it was more adapted to James's ideas of state-craft than the simpler plan of Sir Henry Nevill, that the King should throw himself frankly on the loyalty and good-will of Parliament. And thus he came to be on easy terms with James, who was quite capable of understanding Bacon's resource and nimbleness of wit. In the autumn of 1613 the Chief-Justiceship of the King's Bench became vacant. Bacon at once gave the King reasons for sending Coke from the Common Pleas — where he was a check on the prerogative — to the King's Bench, where he could do less harm; while Hobart went to the Common Pleas. The promotion was obvious, but the Common Pleas suited Coke better, and the place was more lucrative. Bacon's advice was followed. Coke, very reluctantly, knowing well who had given it, and why, "not only weeping himself but followed by the tears" of all the Court of Common Pleas, moved up to the higher post. The Attorney Hobart succeeded, and Bacon at last became Attorney (October 27, 1613). In Chamberlain's gossip we have an indication, such as occurs only accidentally, of the view of outsiders: "There is a strong apprehension that little good is to be expected by this change, and that Bacon may prove a dangerous instrument."

CHAPTER V.

BACON ATTORNEY-GENERAL AND CHANCELLOR.

Thus, at last, at the age of fifty-two, Bacon had gained the place which Essex had tried to get for him at thirty-two. The time of waiting had been a weary one, and it is impossible not to see that it had been hurtful to Bacon. A strong and able man, very eager to have a field for his strength and ability, who is kept out of it, as he thinks unfairly, and is driven to an attitude of suppliant dependency in pressing his claim on great persons who amuse him with words, can hardly help suffering in the humiliating process. It does a man no good to learn to beg, and to have a long training in the art. And further, this long delay kept up the distraction of his mind between the noble work on which his soul was bent, and the necessities of that "civil" or professional and political life by which he had to maintain his estate. All the time that he was "canvassing" (it is his own word) for office, and giving up his time and thoughts to the work which it involved, the great *Instauration* had to wait his hours of leisure; and his exclamation, so often repeated, *Multum incola fuit anima mea*, bears witness to the longings that haunted him in his hours of legal drudgery, or in the service of his not very thankful employers. Not but that he found compensation in the interest of public questions, in the company of the great, in the excitement of state-craft and state employment, in the pomp and enjoyment of court life. He found too much compensation; it was one of his misfortunes. But his heart was always sound in its allegiance to knowledge; and if he had been fortunate enough to have risen earlier to the greatness which he aimed at as a vantage-ground for his true work, or if he had had self-control to have dispensed with wealth and position — if he had escaped the long necessity of being a persistent and still baffled suitor — we might have had as a completed whole what we have now only in great fragments, and we should have been spared the blots which mar a career which ought to have been a noble one.

The first important matter that happened after Bacon's new appointment was the Essex divorce case, and the marriage of Lady Essex with the favourite whom Cecil's death had left at the height of power, and who from Lord Rochester was now made Earl of Somerset. With the divorce, the beginning of the scandals and tragedies of James's reign, Bacon had nothing to do. At the marriage which followed Bacon presented as his offering a masque, performed by the members of Gray's Inn, of which he bore the charges, and which cost him the enormous sum of £2000. Whether it were to repay his obligations to the Howards, or in lieu of a "fee" to Rochester, who levied toll on all favours from the King, it can hardly be said, as has been suggested, to be a protest against the great abuse of the times, the sale of offices for money. The "very splendid trifle, the Masque of Flowers," was one form of the many extravagant tributes paid but too willingly to high-handed worthlessness, of which the deeper and darker guilt was to fill all faces with shame two years afterwards.

As Attorney, Bacon had to take a much more prominent part in affairs, legal, criminal, constitutional, administrative, than he had yet been allowed to have. We know that it was his great object to show how much more active and useful an Attorney he could be than either Coke or Hobart; and as far as unflagging energy and high ability could make a good public servant, he fully carried out his purpose. In Parliament, the "addled Parliament" of 1614, in which he sat for the University of Cambridge, he did his best to reconcile what were fast becoming irreconcilable, the claims and prerogatives of an absolute king, irritable, suspicious, exacting, prodigal, with the ancient rights and liberties, growing stronger in their demands by being denied, resisted, or outwitted, of the popular element in the State. In the trials, which are so large and disagreeable a part of the history of these years — trials arising out of violent words provoked by the violent acts of power, one of which, Peacham's, became famous, because in the course of it torture was resorted to, or trials which witnessed to the corruption of the high society of the day, like the astounding series of arraignments and condemnations following on the discoveries relating to Overbury's murder, which had happened just before the Somerset marriage —

Bacon had to make the best that he could for the cruel and often unequal policy of the Court; and Bacon must take his share in the responsibility for it. An effort on James's part to stop duelling brought from Bacon a worthier piece of service, in the shape of an earnest and elaborate argument against it, full of good sense and good feeling, but hopelessly in advance of the time. On the many questions which touched the prerogative, James found in his Attorney a ready and skilful advocate of his claims, who knew no limit to them but in the consideration of what was safe and prudent to assert. He was a better and more statesmanlike counsellor, in his unceasing endeavours to reconcile James to the expediency of establishing solid and good relations with his Parliament, and in his advice as to the wise and hopeful ways of dealing with it. Bacon had no sympathy with popular wants and claims; of popularity, of all that was called popular, he had the deepest suspicion and dislike; the opinions and the judgment of average men he despised, as a thinker, a politician, and a courtier; the "malignity of the people" he thought great. "I do not love," he says, "the word *people*." But he had a high idea of what was worthy of a king, and was due to the public interests, and he saw the folly of the petty acts and haughty words, the use of which James could not resist. In his new office he once more urged on, and urged in vain, his favourite project for revising, simplifying, and codifying the law. This was a project which would find little favour with Coke, and the crowd of lawyers who venerated him — men whom Bacon viewed with mingled contempt and apprehension both in the courts and in Parliament where they were numerous, and whom he more than once advised the King to bridle and keep "in awe." Bacon presented his scheme to the King in a Proposition, or, as we should call it, a Report. It is very able and interesting; marked with his characteristic comprehensiveness and sense of practical needs, and with a confidence in his own knowledge of law which contrasts curiously with the current opinion about it. He speaks with the utmost honour of Coke's work, but he is not afraid of a comparison with him. "I do assure your Majesty," he says, "I am in good hope that when Sir Edward Coke's Reports and my Rules and Decisions shall come to posterity, there will be (whatever is now thought) question who was the greater

lawyer." But the project, though it was entertained and discussed in Parliament, came to nothing. No one really cared about it except Bacon.

But in these years (1615 and 1616) two things happened of the utmost consequence to him. One was the rise, more extravagant than anything that England had seen for centuries, and in the end more fatal, of the new favourite, who from plain George Villiers became the all-powerful Duke of Buckingham. Bacon, like the rest of the world, saw the necessity of bowing before him; and Bacon persuaded himself that Villiers was pre-eminently endowed with all the gifts and virtues which a man in his place would need. We have a series of his letters to Villiers; they are of course in the complimentary vein which was expected; but if their language is only compliment, there is no language left for expressing what a man wishes to be taken for truth. The other matter was the humiliation, by Bacon's means and in his presence, of his old rival Coke. In the dispute about jurisdiction, always slumbering and lately awakened and aggravated by Coke, between the Common Law Courts and the Chancery, Coke had threatened the Chancery with Præmunire. The King's jealousy took alarm, and the Chief-Justice was called before the Council. There a decree, based on Bacon's advice and probably drawn up by him, peremptorily overruled the legal doctrine maintained by the greatest and most self-confident judge whom the English courts had seen. The Chief-Justice had to acquiesce in this reading of the law; and then, as if such an affront were not enough, Coke was suspended from his office, and, further, enjoined to review and amend his published reports, where they were inconsistent with the view of law which on Bacon's authority the Star Chamber had adopted (June, 1616). This he affected to do, but the corrections were manifestly only colourable; his explanations of his legal heresies against the prerogative, as these heresies were formulated by the Chancellor and Bacon, and presented to him for recantation, were judged insufficient; and in a decree, prefaced by reasons drawn up by Bacon, in which, besides Coke's errors of law, his "deceit, contempt, and slander of the Government," his "perpetual turbulent carriage," and his affectation of popularity, were noted — he was removed from his office (Nov., 1616). So, for

the present, the old rivalry had ended in a triumph for Bacon. Bacon, whom Coke had so long headed in the race, whom he had sneered at as a superficial pretender to law, and whose accomplishments and enthusiasm for knowledge he utterly despised, had not only defeated him, but driven him from his seat with dishonour. When we remember what Coke was, what he had thought of Bacon, and how he prized his own unique reputation as a representative of English law, the effects of such a disgrace on a man of his temper cannot easily be exaggerated.

But for the present Bacon had broken through the spell which had so long kept him back. He won a great deal of the King's confidence, and the King was more and more ready to make use of him, though by no means equally willing to think that Bacon knew better than himself. Bacon's view of the law, and his resources of argument and expression to make it good, could be depended upon in the keen struggle to secure and enlarge the prerogative which was now beginning. In the prerogative both James and Bacon saw the safety of the State and the only reasonable hope of good government; but in Bacon's larger and more elevated views of policy — of a policy worthy of a great king, and a king of England — James was not likely to take much interest. The memorials which it was Bacon's habit to present on public affairs were wasted on one who had so little to learn from others — so he thought and so all assured him — about the secrets of empire. Still they were proofs of Bacon's ready mind; and James, even when he disagreed with Bacon's opinion and arguments, was too clever not to see their difference from the work of other men. Bacon rose in favour; and from the first he was on the best of terms with Villiers. He professed to Villiers the most sincere devotion. According to his custom he presented him with a letter of wise advice on the duties and behaviour of a favourite. He at once began, and kept up with him to the end, a confidential correspondence on matters of public importance. He made it clear that he depended upon Villiers for his own personal prospects, and it had now become the most natural thing that Bacon should look forward to succeeding the Lord Chancellor, Ellesmere, who was fast failing. Bacon had already (Feb. 12, 1615/16). in terms which seem strange to

us, but were less strange then, set forth in a letter to the King the reasons why he should be Chancellor; criticising justly enough, only that he was a party interested, the qualifications of other possible candidates, Coke, Hobart, and the Archbishop Abbott. Coke would be "an overruling nature in an overruling place," and "popular men were no sure mounters for your Majesty's saddle." Hobart was incompetent. As to Abbott, the Chancellor's place required "a whole man," and to have both jurisdiction, spiritual and temporal, "was fit only for a king." The promise that Bacon should have the place came to him three days afterwards through Villiers. He acknowledged it in a burst of gratitude (Feb. 15, 1615/16). "I will now wholly rely on your excellent and happy self.... I am yours surer to you than my own life. For, as they speak of the Turquoise stone in a ring, I will break into twenty pieces before you bear the least fall." They were unconsciously prophetic words. But Ellesmere lasted longer than was expected. It was not till a year after this promise that he resigned. On the 7th of March, 1616/17, Bacon received the seals. He expresses his obligations to Villiers, now Lord Buckingham, in the following letter:

"MY DEAREST LORD, — It is both in cares and kindness that small ones float up to the tongue, and great ones sink down into the heart with silence. Therefore I could speak little to your Lordship to-day, neither had I fit time; but I must profess thus much, that in this day's work you are the truest and perfectest mirror and example of firm and generous friendship that ever was in court. And I shall count every day lost, wherein I shall not either study your well-doing in thought, or do your name honour in speech, or perform you service in deed. Good my Lord, account and accept me your most bounden and devoted friend and servant of all men living,

"March 7, 1616 (*i.e.* 1616/1617).
FR. BACON, C.S."

He himself believed the appointment to be a popular one. "I know I am come in," he writes to the King soon after, "with as strong an envy of some particulars

as with the love of the general." On the 7th of May, 1617, he took his seat in Chancery with unusual pomp and magnificence, and set forth, in an opening speech, with all his dignity and force, the duties of his great office and his sense of their obligation. But there was a curious hesitation in treating him as other men were treated in like cases. He was only "Lord Keeper." It was not till the following January (1617/18) that he received the office of Lord Chancellor. It was not till half a year afterwards that he was made a Peer. Then he became Baron Verulam (July, 1618), and in January, 1620/21, Viscount St. Alban's.

From this time Bacon must be thought of, first and foremost, as a Judge in the great seat which he had so earnestly sought. It was the place not merely of law, which often tied the judge's hands painfully, but of true justice, when law failed to give it. Bacon's ideas of the duties of a judge were clear and strong, as he showed in various admirable speeches and charges: his duties as regards his own conduct and reputation; his duties in keeping his subordinates free from the taint of corruption. He was not ignorant of the subtle and unacknowledged ways in which unlawful gains may be covered by custom, and an abuse goes on because men will not choose to look at it. He entered on his office with the full purpose of doing its work better than it had ever been done. He saw where it wanted reforming, and set himself at once to reform. The accumulation and delay of suits had become grievous; at once he threw his whole energy into the task of wiping out the arrears which the bad health of his predecessor and the traditional sluggishness of the court had heaped up. In exactly three months from his appointment he was able to report that these arrears had been cleared off. "This day" (June 8, 1617), he writes to Buckingham, "I have made even with the business of the kingdom for common justice. Not one cause unheard. The lawyers drawn dry of all the motions they were to make. Not one petition unheard. And this I think could not be said in our time before."

The performance was splendid, and there is no reason to think that the work so rapidly done was not well done. We are assured that Bacon's decisions were unquestioned, and were not complained of. At the same time, before this allegation is accepted as conclusive proof of the public satisfaction, it must be

remembered that the question of his administration of justice, which was at last to assume such strange proportions, has never been so thoroughly sifted as, to enable us to pronounce upon it, it should be. The natural tendency of Bacon's mind would undoubtedly be to judge rightly and justly; but the negative argument of the silence at the time of complainants, in days when it was so dangerous to question authority, and when we have so little evidence of what men said at their firesides, is not enough to show that he never failed.

But the serious thing is that Bacon subjected himself to two of the most dangerous influences which can act on the mind of a judge — the influence of the most powerful and most formidable man in England, and the influence of presents, in money and other gifts. From first to last he allowed Buckingham, whom no man, as Bacon soon found, could displease except at his own peril, to write letters to him on behalf of suitors whose causes were before him; and he allowed suitors, not often while the cause was pending, but sometimes even then, to send him directly, or through his servants, large sums of money. Both these things are explained. It would have been characteristic of Bacon to be confident that he could defy temptation: these habits were the fashion of the time, and everybody took them for granted; Buckingham never asked his good offices beyond what Bacon thought just and right, and asked them rather for the sake of expedition than to influence his judgment. And as to the money presents — every office was underpaid; this was the common way of acknowledging pains and trouble: it was analogous to a doctor's or a lawyer's fee now. And there is no proof that either influence ever led Bacon to do wrong. This has been said, and said with some degree of force. But if it shows that Bacon was not in this matter below his age, it shows that he was not above it. No one knew better than Bacon that there were no more certain dangers to honesty and justice than the interference and solicitation of the great, and the old famous pest of bribes, of which all histories and laws were full. And yet on the highest seat of justice in the realm he, the great reformer of its abuses, allowed them to make their customary haunt. He did not mean to do wrong: his conscience was clear; he had not given thought to the mischief they must do, sooner or later, to all concerned

with the Court of Chancery. With a magnificent carelessness he could afford to run safely a course closely bordering on crime, in which meaner men would sin and be ruined.

Before six months were over Bacon found on what terms he must stand with Buckingham. By a strange fatality, quite unintentionally, he became dragged into the thick of the scandalous and grotesque dissensions of the Coke family. The Court was away from London in the North; and Coke had been trying, not without hope of success, to recover the King's favour. Coke was a rich man, and Lady Compton, the mother of the Villiers, thought that Coke's daughter would be a good match for one of her younger sons. It was really a great chance for Coke; but he haggled about the portion; and the opportunity, which might perhaps have led to his taking Bacon's place, passed. But he found himself in trouble in other ways; his friends, especially Secretary Winwood, contrived to bring the matter on again, and he consented to the Villiers's terms. But his wife, the young lady's mother, Lady Hatton, would not hear of it, and a furious quarrel followed. She carried off her daughter into the country. Coke, with a warrant from Secretary Winwood, which Bacon had refused to give him, pursued her: "with his son, 'Fighting Clem,' and ten or eleven servants, weaponed, in a violent manner he repaired to the house where she was remaining, and with a piece of timber or form broke open the door and dragged her along to his coach." Lady Hatton rushed off the same afternoon for help to Bacon.

After an overturn by the way, "at last to my Lord Keeper's they come, but could not have instant access to him, for that his people told them he was laid at rest, being not well. Then my La. Hatton desired she might be in the next room where my Lord lay, that she might be the first that [should] speak with him after he was stirring. The door-keeper fulfilled her desire, and in the meantime gave her a chair to rest herself in, and there left her alone; but not long after, she rose up and bounced against my Lord Keeper's door, and waked him and affrighted him, that he called his men to him; and they opening the door, she thrust in with them, and desired his Lp. to pardon her boldness, but she was like a cow that had lost her calf, and so justified [herself] and pacified my Lord's anger, and got his

warrant and my Lo. Treasurer's warrant and others of the Council to fetch her daughter from the father and bring them both to the Council."

It was a chance that the late Chief-Justice and his wife, with their armed parties, did not meet on the road, in which case "there were like to be strange tragedies." At length the Council compelled both sides to keep the peace, and the young lady was taken for the present out of the hands of her raging parents. Bacon had assumed that the affair was the result of an intrigue between Winwood and Coke, and that the Court would take part against Coke, a man so deep in disgrace and so outrageously violent. Supposing that he had the ear of Buckingham, he wrote earnestly, persuading him to put an end to the business; and in the meantime the Council ordered Coke to be brought before the Star Chamber "for riot and force," to "be heard and sentenced as justice shall appertain." They had not the slightest doubt that they were doing what would please the King. A few days after they met, and then they learned the truth.

"Coke and his friends," writes Chamberlain, "complain of hard measure from some of the greatest at that board, and that he was too much trampled upon with ill language. And our friend [*i.e.* Winwood] passed out scot free for the warrant, which the greatest [*word illegible*] there said was subject to a *præmunire*; and withal told the Lady Compton that they wished well to her and her sons, and would be ready to serve the Earl of Buckingham with all true affection, whereas others did it out of faction and ambition — which words glancing directly at our good friend (Winwood), he was driven to make his apology, and to show how it was put upon him from time to time by the Queen and other parties; and, for conclusion, showed a letter of approbation of all his courses from the King, making the whole table judge what faction and ambition appeared in this carriage. *Ad quod non fuit responsum.*"

None indeed, but blank faces, and thoughts of what might come next. The Council, and Bacon foremost, had made a desperate mistake. "It is evident," as Mr. Spedding says, "that he had not divined Buckingham's feelings on the subject." He was now to learn them. To his utter amazement and alarm he found that the King was strong for the match, and that the proceeding of the Council

was condemned at Court as gross misconduct. In vain he protested that he was quite willing to forward the match; that in fact he had helped it. Bacon's explanations, and his warnings against Coke the King "rejected with some disdain;" he justified Coke's action; he charged Bacon with disrespect and ingratitude to Buckingham; he put aside his arguments and apologies as worthless or insincere. Such reprimands had not often been addressed, even to inferior servants. Bacon's letters to Buckingham remained at first without notice; when Buckingham answered he did so with scornful and menacing curtness. Meanwhile Bacon heard from Yelverton how things were going at Court.

"Sir E. Coke," he wrote, "hath not forborne by any engine to heave at both your Honour and myself, and he works the weightiest instrument, the Earl of Buckingham, who, as I see, sets him as close to him as his shirt, the Earl speaking in Sir Edward's phrase, and as it were menacing in his spirit."

Buckingham, he went on to say, "did nobly and plainly tell me he would not secretly bite, but whosoever had had any interest, or tasted of the opposition to his brother's marriage, he would as openly oppose them to their faces, and they should discern what favour he had by the power he would use." The Court, like a pack of dogs, had set upon Bacon. "It is too common in every man's mouth in Court that your greatness shall be abated, and as your tongue hath been as a razor unto some, so shall theirs be to you." Buckingham said to every one that Bacon had been forgetful of his kindness and unfaithful to him: "not forbearing in open speech to tax you, as if it were an inveterate custom with you, to be unfaithful unto him, as you were to the Earls of Essex and Somerset."

All this while Bacon had been clearly in the right. He had thrust himself into no business that did not concern him. He had not, as Buckingham accuses him of having done, "overtroubled" himself with the marriage. He had done his simple duty as a friend, as a councillor, as a judge. He had been honestly zealous for the Villiers's honour, and warned Buckingham of things that were beyond question. He had curbed Coke's scandalous violence, perhaps with no great regret, but with manifest reason. But for this he was now on the very edge of losing his office; it was clear to him, as it is clear to us, that nothing could save him but

absolute submission. He accepted the condition. How this submission was made and received, and with what gratitude he found that he was forgiven, may be seen in the two following letters. Buckingham thus extends his grace to the Lord Keeper, and exhorts him to better behaviour:

"But his Majesty's direction in answer of your letter hath given me occasion to join hereunto a discovery unto you of mine inward thoughts, proceeding upon the discourse you had with me this day. For I do freely confess that your offer of submission unto me, and in writing (if so I would have it), battered so the unkindness that I had conceived in my heart for your behaviour towards me in my absence, as out of the sparks of my old affection towards you I went to sound his Majesty's intention how he means to behave himself towards you, specially in any public meeting; where I found on the one part his Majesty so little satisfied with your late answer unto him, which he counted (for I protest I use his own terms) *confused and childish*, and his vigorous resolution on the other part so fixed, that he would put some public exemplary mark upon you, as I protest the sight of his deep-conceived indignation quenched my passion, making me upon the instant change from the person of a party into a peace-maker; so as I was forced upon my knees to beg of his Majesty that he would put no public act of disgrace upon you, and, as I dare say, no other person would have been patiently heard in this suit by his Majesty but myself, so did I (though not without difficulty) obtain thus much — that he would not so far disable you from the merit of your future service as to put any particular mark of disgrace upon your person. Only thus far his Majesty protesteth, that upon the conscience of his office he cannot omit (though laying aside all passion) to give a kingly reprimand at his first sitting in council to so many of his councillors as were then here behind, and were actors in this business, for their ill behaviour in it. Some of the particular errors committed in this business he will name, but without accusing any particular persons by name.

"Thus your Lordship seeth the fruits of my natural inclination; and I protest all this time past it was no small grief unto me to hear the mouth of so many upon this occasion open to load you with innumerable malicious and detracting

speeches, as if no music were more pleasing to my ears than to rail of you, which made me rather regret the ill nature of mankind, that like dogs love to set upon him that they see once snatched at. And to conclude, my Lord, you have hereby a fair occasion so to make good hereafter your reputation by your sincere service to his Majesty, as also by your firm and constant kindness to your friends, as I may (your Lordship's old friend) participate of the comfort and honour that will thereby come to you. Thus I rest at last

"Your Lordship's faithful friend and servant,
"G.B."

"MY EVER BEST LORD, now better than yourself, — Your Lordship's pen, or rather pencil, hath pourtrayed towards me such magnanimity and nobleness and true kindness, as methinketh I see the image of some ancient virtue, and not anything of these times. It is the line of my life, and not the lines of my letter, that must express my thankfulness; wherein if I fail, then God fail me, and make me as miserable as I think myself at this time happy by this reviver, through his Majesty's singular clemency, and your incomparable love and favour. God preserve you, prosper you, and reward you for your kindness to

"Your raised and infinitely obliged friend and servant,
"Sept. 22, 1617.
FR. BACON, C.S."

Thus he had tried his strength with Buckingham. He had found that this, "a little parent-like" manner of advising him, and the doctrine that a true friend "ought rather to go against his mind than his good," was not what Buckingham expected from him. And he never ventured on it again. It is not too much to say that a man who could write as he now did to Buckingham, could not trust himself in any matter in which Buckingham, was interested.

But the reconciliation was complete, and Bacon took his place more and more as one of the chief persons in the Government. James claimed so much to have

his own way, and had so little scruple in putting aside, in his superior wisdom, sometimes very curtly, Bacon's or any other person's recommendations, that though his services were great, and were not unrecognised, he never had the power and influence in affairs to which his boundless devotion to the Crown, his grasp of business, and his willing industry, ought to have entitled him. He was still a servant, and made to feel it, though a servant in the "first form." It was James and Buckingham who determined the policy of the country, or settled the course to be taken in particular transactions; when this was settled, it was Bacon's business to carry it through successfully. In this he was like all the other servants of the Crown, and like them he was satisfied with giving his advice, whether it were taken or not; but unlike many of them he was zealous in executing with the utmost vigour and skill the instructions which were given him. Thus he was required to find the legal means for punishing Raleigh; and, as a matter of duty, he found them. He was required to tell the Government side of the story of Raleigh's crimes and punishment — which really was one side of the story, only not by any means the whole; and he told it, as he had told the Government story against Essex, with force, moderation, and good sense. Himself, he never would have made James's miserable blunders about Raleigh; but the blunders being made, it was his business to do his best to help the King out of them. When Suffolk, the Lord Treasurer, was disgraced and brought before the Star Chamber for corruption and embezzlement in his office, Bacon thought that he was doing no more than his duty in keeping Buckingham informed day by day how the trial was going on; how he had taken care that Suffolk's submission should not stop it— "for all would be but a play on the stage if justice went not on in the right course;" how he had taken care that the evidence went well— "I will not say I sometime holp it, as far as was fit for a judge;" how, "a little to warm the business" ... "I spake a word, that he that did draw or milk treasure from Ireland, did not, *emulgere*, milk money, but blood." This, and other "little things" like it, while he was sitting as a judge to try, if the word may be used, a personal enemy of Buckingham, however bad the case might be against Suffolk, sound strange indeed to us; and not less so when, in

reporting the sentence and the various opinions of the Council about it, he, for once, praises Coke for the extravagance of his severity: “Sir Edward Coke did his part — I have not heard him do better — and began with a fine of £100,000; but the judges first, and most of the rest, reduced it to £30,000. I do not dislike that thing passed moderately; and all things considered, it is not amiss, and might easily have been worse.”

In all this, which would have been perfectly natural from an Attorney-General of the time, Bacon saw but his duty, even as a judge between the Crown and the subject. It was what was expected of those whom the King chose to employ, and whom Buckingham chose to favour. But a worse and more cruel case, illustrating the system which a man like Bacon could think reasonable and honourable, was the disgrace and punishment of Yelverton, the Attorney-General, the man who had stood by Bacon, and in his defence had faced Buckingham, knowing well Buckingham’s dislike of himself, when all the Court turned against Bacon in his quarrel with Coke and Lady Compton. Towards the end of the year 1620, on the eve of a probable meeting of Parliament, there was great questioning about what was to be done about certain patents and monopolies — monopolies for making gold and silk thread, and for licensing inns and ale-houses — which were in the hands of Buckingham’s brothers and their agents. The monopolies were very unpopular; there was always doubt as to their legality; they were enforced oppressively and vexatiously by men like Michell and Mompesson, who acted for the Villiers; and the profits of them went, for the most part, not into the Exchequer, but into the pockets of the hangers-on of Buckingham. Bacon defended them both in law and policy, and his defence is thought by Mr. Gardiner to be not without grounds; but he saw the danger of obstinacy in maintaining what had become so hateful in the country, and strongly recommended that the more indefensible and unpopular patents should be spontaneously given up, the more so as they were of “no great fruit.” But Buckingham’s insolent perversity “refused to be convinced.” The Council, when the question was before them, decided to maintain them. Bacon, who had rightly voted in the minority, thus explains his own vote to Buckingham: “The

King did wisely put it upon and consult, whether the patents were at this time to be removed by Act of Council before Parliament. *I opined (but yet somewhat like Ovid's mistress, that strove, but yet as one that would be overcome), that yes!*" But in the various disputes which had arisen about them, Yelverton had shown that he very much disliked the business of defending monopolies, and sending London citizens to jail for infringing them. He did it, but he did it grudgingly. It was a great offence in a man whom Buckingham had always disliked; and it is impossible to doubt that what followed was the consequence of his displeasure.

"In drawing up a new charter for the city of London," writes Mr. Gardiner, "Yelverton inserted clauses for which he was unable to produce a warrant. The worst that could be said was that he had, through inadvertence, misunderstood the verbal directions of the King. Although no imputation of corruption was brought against him, yet he was suspended from his office, and prosecuted in the Star Chamber. He was then sentenced to dismissal from his post, to a fine of £4000, and to imprisonment during the Royal pleasure."

In the management of this business Bacon had the chief part. Yelverton, on his suspension, at once submitted. The obnoxious clauses are not said to have been of serious importance, but they were new clauses which the King had not sanctioned, and it would be a bad precedent to pass over such unauthorised additions even by an Attorney-General. "I mistook many things," said Yelverton afterwards, in words which come back into our minds at a later period, "I was improvident in some things, and too credulous in all things." It might have seemed that dismissal, if not a severe reprimand, was punishment enough. But the submission was not enough, in Bacon's opinion, "for the King's honour." He dwelt on the greatness of the offence, and the necessity of making a severe example. According to his advice, Yelverton was prosecuted in the Star Chamber. It was not merely a mistake of judgment. "Herein," said Bacon, "I note the wisdom of the law of England, which termeth the highest contempt and excesses of authority *Misprisions*; which (if you take the sound and derivation of the word) is but *mistaken*; but if you take the use and acception of the word, it is

high and heinous contempt and usurpation of authority; whereof the reason I take to be and the name excellently imposed, for that main mistaking, it is ever joined with contempt; for he that reveres will not easily mistake; but he that slights, and thinks more of the greatness of his place than of the duty of his place, will soon commit misprisions." The day would come when this doctrine would be pressed with ruinous effect against Bacon himself. But now he expounded with admirable clearness the wrongness of carelessness about warrants and of taking things for granted. He acquitted his former colleague of "corruption of reward;" but "in truth that makes the offence rather divers than less;" for some offences "are black, and others scarlet, some sordid, some presumptuous." He pronounced his sentence — the fine, the imprisonment; "for his place, I declare him unfit for it." "And the next day," says Mr. Spedding, "he reported to Buckingham the result of the proceeding," and takes no small credit for his own part in it.

It was thus that the Court used Bacon, and that Bacon submitted to be used. He could have done, if he had been listened to, much nobler service. He had from the first seen, and urged as far as he could, the paramount necessity of retrenchment in the King's profligate expenditure. Even Buckingham had come to feel the necessity of it at last; and now that Bacon filled a seat at the Council, and that the prosecution of Suffolk and an inquiry into the abuses of the Navy had forced on those in power the urgency of economy, there was a chance of something being done to bring order into the confusion of the finances. Retrenchment began at the King's kitchen and the tables of his servants; an effort was made, not unsuccessfully, to extend it wider, under the direction of Lionel Cranfield, a self-made man of business from the city; but with such a Court the task was an impossible one. It was not Bacon's fault, though he sadly mismanaged his own private affairs, that the King's expenditure was not managed soberly and wisely. Nor was it Bacon's fault, as far as advice went, that James was always trying either to evade or to outwit a Parliament which he could not, like the Tudors, overawe. Bacon's uniform counsel had been — Look on a Parliament as a certain necessity, but not only as a necessity, as also a

unique and most precious means for uniting the Crown with the nation, and proving to the world outside how Englishmen love and honour their King, and their King trusts his subjects. Deal with it frankly and nobly as becomes a king, not suspiciously like a huckster in a bargain. Do not be afraid of Parliament. Be skilful in calling it, but don't attempt to "pack" it. Use all due adroitness and knowledge of human nature, and necessary firmness and majesty, in managing it; keep unruly and mischievous people in their place, but do not be too anxious to meddle— "let nature work;" and above all, though of course you want money from it, do not let that appear as the chief or real cause of calling it. Take the lead in legislation. Be ready with some interesting or imposing points of reform, or policy, about which you ask your Parliament to take counsel with you. Take care to "frame and have ready some commonwealth bills, that may add respect to the King's government and acknowledgment of his care; not *wooing* bills to make the King and his graces cheap, but good matter to set the Parliament on work, that an empty stomach do not feed on humour." So from the first had Bacon always thought; so he thought when he watched, as a spectator, James's blunders with his first Parliament of 1604; so had he earnestly counselled James, when admitted to his confidence, as to the Parliaments of 1614 and 1615; so again, but in vain, as Chancellor, he advised him to meet the Parliament of 1620. It was wise, and from his point of view honest advice, though there runs all through it too much reliance on appearances which were not all that they seemed; there was too much thought of throwing dust in the eyes of troublesome and inconvenient people. But whatever motives there might have been behind, it would have been well if James had learned from Bacon how to deal with Englishmen. But he could not. "I wonder," said James one day to Gondomar, "that my ancestors should ever have permitted such an institution as the House of Commons to have come into existence. I am a stranger, and found it here when I arrived, so that I am obliged to put up with what I cannot get rid of." James was the only one of our many foreign kings who, to the last, struggled to avoid submitting himself to the conditions of an English throne.

CHAPTER VI.

BACON'S FALL.

When Parliament met on January 30, 1620/21, and Bacon, as Lord Chancellor, set forth in his ceremonial speeches to the King and to the Speaker the glories and blessings of James's reign, no man in England had more reason to think himself fortunate. He had reached the age of sixty, and had gained the object of his ambition. More than that, he was conscious that in his great office he was finding full play for his powers and his high public purposes. He had won greatly on the confidence of the King. He had just received a fresh mark of honour from him: a few days before he had been raised a step in the peerage, and he was now Viscount St. Alban's. With Buckingham he seemed to be on terms of the most affectionate familiarity, exchanging opinions freely with him on every subject. And Parliament met in good-humour. They voted money at once. One of the matters which interested Bacon most — the revision of the Statute Book — they took up as one of their first measures, and appointed a Select Committee to report upon it. And what, amid the apparent felicity of the time, was of even greater personal happiness to Bacon, the first step of the "Great Instauration" had been taken. During the previous autumn, Oct. 12, 1620, the *Novum Organum*, the first instalment of his vast design, was published, the result of the work of thirty years; and copies were distributed to great people, among others to Coke. He apprehended no evil; he had nothing to fear, and much to hope from the times.

His sudden and unexpected fall, so astonishing and so irreparably complete, is one of the strangest events of that still imperfectly comprehended time. There had been, and were still to be, plenty of instances of the downfall of power, as ruinous and even more tragic, though scarcely any one more pathetic in its surprise and its shame. But it is hard to find one of which so little warning was given, and the causes of which are at once in part so clear, and in part so obscure

and unintelligible. Such disasters had to be reckoned upon as possible chances by any one who ventured into public life. Montaigne advises that the discipline of pain should be part of every boy's education, for the reason that every one in his day might be called upon to undergo the torture. And so every public man, in the England of the Tudors and Stuarts, entered on his career with the perfectly familiar expectation of possibly closing it — it might be in an honourable and ceremonious fashion, in the Tower and on the scaffold — just as he had to look forward to the possibility of closing it by small-pox or the plague. So that when disaster came, though it might be unexpected, as death is unexpected, it was a turn of things which ought not to take a man by surprise. But some premonitory signs usually gave warning. There was nothing to warn Bacon that the work which he believed he was doing so well would be interrupted.

We look in vain for any threatenings of the storm. What the men of his time thought and felt about Bacon it is not easy to ascertain. Appearances are faint and contradictory; he himself, though scornful of judges who sought to be "popular," believed that he "came in with the favour of the general;" that he "had a little popular reputation, which followeth me whether I will or no." No one for years had discharged the duties of his office with greater efficiency. Scarcely a trace remains of any suspicion, previous to the attack upon him, of the justice of his decisions; no instance was alleged that, in fact, impure motives had controlled the strength and lucidity of an intellect which loved to be true and right for the mere pleasure of being so. Nor was there anything in Bacon's political position to make him specially obnoxious above all others of the King's Council. He maintained the highest doctrines of prerogative; but they were current doctrines, both at the Council board and on the bench; and they were not discredited nor extinguished by his fall. To be on good terms with James and Buckingham meant a degree of subservience which shocks us now; but it did not shock people then, and he did not differ from his fellows in regarding it as part of his duty as a public servant of the Crown. No doubt he had enemies — some with old grudges like Southampton, who had been condemned with Essex; some like Suffolk, smarting under recent reprimands and the biting edge of Bacon's

tongue; some like Coke, hating him from constitutional antipathies and the strong antagonism of professional doctrines, for a long course of rivalry and for mortifying defeats. But there is no appearance of preconcerted efforts among them to bring about his overthrow. He did not at the time seem to be identified with anything dangerous or odious. There was no doubt a good deal of dissatisfaction with Chancery — among the common lawyers, because it interfered with their business; in the public, partly from the traditions of its slowness, partly from its expensiveness, partly because, being intended for special redress of legal hardship, it was sure to disappoint one party to a suit. But Bacon thought that he had reformed Chancery. He had also done a great deal to bring some kind of order, or at least hopefulness of order, into the King's desperate finances. And he had never set himself against Parliament. On the contrary, he had always been forward to declare that the King could not do without Parliament, and that Parliament only needed to be dealt with generously, and as "became a King," to be not a danger and hindrance to the Crown but its most sincere and trustworthy support.

What was then to portend danger to Bacon when the Parliament of 1620/21 met? The House of Commons at its meeting was thoroughly loyal and respectful; it meant to be *benedictum et pacificum parliamentum*. Every one knew that there would be "grievances" which would not be welcome to the Court, but they did not seem likely to touch him. Every one knew that there would be questions raised about unpopular patents and oppressive monopolies, and about their legality; and it was pretty well agreed upon at Court that they should be given up as soon as complained of. But Bacon was not implicated more than the Crown lawyers before him, in what all the Crown lawyers had always defended. There was dissatisfaction about the King's extravagance and wastefulness, about his indecision in the cause of the Elector Palatine, about his supposed intrigues with Papistical and tyrannical Spain; but Bacon had nothing to do with all this except, as far as he could, to give wise counsel and warning. The person who made the King despised and hated was the splendid and insolent favourite, Buckingham. It might have been thought that the one thing to be set against much that was

wrong in the State was the just and enlightened and speedy administration of equity in the Chancery.

When Parliament met, though nothing seemed to threaten mischief, it met with a sturdy purpose of bringing to account certain delinquents whose arrogance and vexations of the subjects had provoked the country, and who were supposed to shelter themselves under the countenance of Buckingham. Michell and Mompesson were rascals whose misdemeanors might well try the patience of a less spirited body than an English House of Commons. Buckingham could not protect them, and hardly tried to do so. But just as one electric current "induces" another by neighbourhood, so all this deep indignation against Buckingham's creatures created a fierce temper of suspicion about corruption all through the public service. Two Committees were early appointed by the House of Commons: one a Committee on Grievances, such as the monopolies; the other, a Committee to inquire into abuses in the Courts of Justice and receive petitions about them. In the course of the proceedings, the question arose in the House as to the authorities or "referees" who had certified to the legality of the Crown patents or grants which had been so grossly abused; and among these "referees" were the Lord Chancellor and other high officers, both legal and political.

It was the little cloud. But lookers-on like Chamberlain did not think much of it. "The referees," he wrote on Feb. 29th, "who certified the legality of the patents are glanced at, but they are chiefly above the reach of the House; they attempt so much that they will accomplish little." Coke, who was now the chief leader in Parliament, began to talk ominously of precedents, and to lay down rules about the power of the House to punish — rules which were afterwards found to have no authority for them. Cranfield, the representative of severe economy, insisted that the honour of the King required that the referees, whoever they were, should be called to account. The gathering clouds shifted a little, when the sense of the House seemed to incline to giving up all retrospective action, and to a limitation for the future by statute of the questionable prerogative — a limitation which was in fact attempted by a bill thrown out by

the Lords. But they gathered again when the Commons determined to bring the whole matter before the House of Lords. The King wrote to warn Bacon of what was coming. The proposed conference was staved off by management for a day or two, but it could not be averted, and the Lords showed their eagerness for it. And two things by this time — the beginning of March — seemed now to have become clear, first, that under the general attack on the referees was intended a blow against Bacon; next, that the person whom he had most reason to fear was Sir Edward Coke.

The storm was growing; but Bacon was still unalarmed, though Buckingham had been frightened into throwing the blame on the referees.

"I do hear," he writes to Buckingham (dating his letter on March 7th, "the day I received the seal"), "from divers of judgement, that to-morrow's conference is like to pass in a calm, as to the referees. Sir Lionel Cranfield, who hath been formerly the trumpet, said yesterday that he did now incline unto Sir John Walter's opinion and motion not to have the referees meddled with, otherwise than to discount it from the King; and so not to look back, but to the future. And I do hear almost all men of judgement in the House wish now that way. I woo nobody; I do but listen, and I have doubt only of Sir Edward Coke, who I wish had some round *caveat* given him from the King; for your Lordship hath no great power with him. But a word from the King mates him."

But Coke's opportunity had come. The House of Commons was disposed for gentler measures. But he was able to make it listen to his harsher counsels, and from this time his hand appears in all that was done. The first conference was a tame and dull one. The spokesmen had been slack in their disagreeable and perhaps dangerous duty. But Coke and his friends took them sharply to task. "The heart and tongue of Sir Edward Coke are true relations," said one of his fervent supporters; "but his pains hath not reaped that harvest of praise that he hath deserved. For the referees, they are as transcendent delinquents as any other, and sure their souls made a wilful elopement from their bodies when they made these certificates." A second conference was held with the Lords, and this time the charge was driven home. The referees were named, the Chancellor at

the head of them. When Bacon rose to explain and justify his acts he was sharply stopped, and reminded that he was transgressing the orders of the House in speaking till the Committees were named to examine the matter. What was even more important, the King had come to the House of Lords (March 10th), and frightened, perhaps, about his subsidies, told them "that he was not guilty of those grievances which are now discovered, but that he grounded his judgement upon others who have misled him." The referees would be attacked, people thought, if the Lower House had courage.

All this was serious. As things were drifting, it seemed as if Bacon might have to fight the legal question of the prerogative in the form of a criminal charge, and be called upon to answer the accusation of being the minister of a crown which legal language pronounced absolute, and of a King who interpreted legal language to the letter; and further, to meet his accusers after the King himself had disavowed what his servant had done. What passed between Bacon and the King is confused and uncertain; but after his speech the King could scarcely have thought of interfering with the inquiry. The proceedings went on; Committees were named for the several points of inquiry; and Bacon took part in these arrangements. It was a dangerous position to have to defend himself against an angry House of Commons, led and animated by Coke and Cranfield. But though the storm had rapidly thickened, the charges against the referees were not against him alone. His mistake in law, if it was a mistake, was shared by some of the first lawyers and first councillors in England. There was a battle before him, but not a hopeless one. "*Modicæ fidei, quare dubitasti*" he writes about this time to an anxious friend.

But in truth the thickening storm had been gathering over his head alone. It was against him that the whole attack was directed; as soon as it took a different shape, the complaints against the other referees, such as the Chief-Justice, who was now Lord Treasurer, though some attempt was made to press them, were quietly dropped. What was the secret history of these weeks we do not know. But the result of Bacon's ruin was that Buckingham was saved. "As they speak of the Turquoise stone in a ring," Bacon had said to Buckingham when he was

made Chancellor, “I will break into twenty pieces before you have the least fall.” Without knowing what he pledged himself to, he was taken at his word.

At length the lightning fell. During the early part of March, while these dangerous questions were mooted about the referees, a Committee, appointed early in the session, had also been sitting on abuses in courts of justice, and as part of their business, an inquiry had been going on into the ways of the subordinate officers of the Court of Chancery. Bacon had early (Feb. 17th) sent a message to the Committee courting full inquiry, “willingly consenting that any man might speak anything of his Court.” On the 12th of March the chairman, Sir R. Philips, reported that he had in his hands “divers petitions, many frivolous and clamorous, many of weight and consequence.” Cranfield, who presided over the Court of Wards, had quarrelled fiercely with the Chancery, where he said there was “neither Law, Equity, nor Conscience,” and pressed the inquiry, partly, it may be, to screen his own Court, which was found fault with by the lawyers. Some scandalous abuses were brought to light in the Chancery. They showed that “Bacon was at fault in the art of government,” and did not know how to keep his servants in order. One of them, John Churchill, an infamous forger of Chancery orders, finding things going hard with him, and “resolved,” it is said, “not to sink alone,” offered his confessions of all that was going on wrong in the Court. But on the 15th of March things took another turn. It was no longer a matter of doubtful constitutional law; no longer a question of slack discipline over his officers. To the astonishment, if not of the men of his own day, at least to the unexhausted astonishment of times following, a charge was suddenly reported from the Committee to the Commons against the Lord Chancellor, not of straining the prerogative, or of conniving at his servants’ misdoings, but of being himself a corrupt and venal judge. Two suitors charged him with receiving bribes. Bacon was beginning to feel worried and anxious, and he wrote thus to Buckingham. At length he had begun to see the meaning of all these inquiries, and to what they were driving.

“MY VERY GOOD LORD, — Your Lordship spake of Purgatory. I am now in it, but my mind is in a calm, for my fortune is not my felicity. I know I have

clean hands and a clean heart, and I hope a clean house for friends or servants. But Job himself, or whosoever was the justest judge, by such hunting for matters against him as hath been used against me, may for a time seem foul, specially in a time when greatness is the mark and accusation is the game. And if this be to be a Chancellor. I think if the great seal lay upon Hounslow Heath nobody would take it up. But the King and your Lordship will, I hope, put an end to these miseries one way or other. And in troth that which I fear most is lest continual attendance and business, together with these cares, and want of time to do my weak body right this spring by diet and physic, will cast me down; and then it will be thought feigning or fainting. But I hope in God I shall hold out. God prosper you."

The first charges attracted others, which were made formal matters of complaint by the House of Commons. John Churchill, to save himself, was busy setting down cases of misdoing; and probably suitors of themselves became ready to volunteer evidence. But of this Bacon as yet knew nothing. He was at this time only aware that there were persons who were "hunting out complaints against him," that the attack was changed from his law to his private character; he had found an unfavourable feeling in the House of Lords; and he knew well enough what it was to have powerful enemies in those days when a sentence was often settled before a trial. To any one, such a state of things was as formidable as the first serious symptoms of a fever. He was uneasy, as a man might well be on whom the House of Commons had fixed its eye, and to whom the House of Lords had shown itself unfriendly. But he was as yet conscious of nothing fatal to his defence, and he knew that if false accusations could be lightly made they could also be exposed.

A few days after the first mention of corruption the Commons laid their complaints of him before the House of Lords, and on the same day (March 19) Bacon, finding himself too ill to go to the House, wrote to the Peers by Buckingham, requesting them that as some "complaints of base bribery" had come before them, they would give him a fair opportunity of defending himself, and of cross-examining witnesses; especially begging, that considering the

number of decrees which he had to make in a year — more than two thousand — and "the courses which had been taken in hunting out complaints against him," they would not let their opinion of him be affected by the mere number of charges that might be made. Their short verbal answer, moved by Southampton (March 20), that they meant to proceed by right rule of justice, and would be glad if he cleared his honour, was not encouraging. And now that the Commons had brought the matter before them, the Lords took it entirely into their own hands, appointing three Committees, and examining the witnesses themselves. New witnesses came forward every day with fresh cases of gifts and presents, "bribes" received by the Lord Chancellor. When Parliament rose for the Easter vacation (March 27-April 17), the Committees continued sitting. A good deal probably passed of which no record remains. When the Commons met again (April 17) Coke was full of gibes about *Instauratio Magna* — the true *Instauratio* was to restore laws — and two days after an Act was brought in for review and reversal of decrees in Courts of Equity. It was now clear that the case against Bacon had assumed formidable dimensions, and also a very strange, and almost monstrous shape. For the Lords, who were to be the judges, had by their Committees taken the matter out of the hands of the Commons, the original accusers, and had become themselves the prosecutors, collecting and arranging evidence, accepting or rejecting depositions, and doing all that counsel or the committing magistrate would do preliminary to a trial. There appears to have been no cross-examining of witnesses on Bacon's behalf, or hearing witnesses for him — not unnaturally at this stage of business, when the prosecutors were engaged in making out their own case; but considering that the future judges had of their own accord turned themselves into the prosecutors, the unfairness was great. At the same time it does not appear that Bacon did anything to watch how things went in the Committees, which had his friends in them as well as his enemies, and are said to have been open courts. Towards the end of March, Chamberlain wrote to Carleton that "the Houses were working hard at cleansing out the Augæan stable of monopolies, and also extortions in Courts of Justice. The petitions against the Lord Chancellor were too numerous to be got through:

his chief friends and brokers of bargains, Sir George Hastings and Sir Richard Young, and others attacked, are obliged to accuse him in their own defence, though very reluctantly. His ordinary bribes were £300, £400, and even £1000.... The Lords admit no evidence except on oath. One Churchill, who was dismissed from the Chancery Court for extortion, is the chief cause of the Chancellor's ruin."[3] Bacon was greatly alarmed. He wrote to Buckingham, who was "his anchor in these floods." He wrote to the King; he was at a loss to account for the "tempest that had come on him;" he could not understand what he had done to offend the country or Parliament; he had never "taken rewards to pervert justice, however he might be frail, and partake of the abuse of the time."

"Time hath been when I have brought unto you *genitum columbæ*, from others. Now I bring it from myself. I fly unto your Majesty with the wings of a dove, which once within these seven days I thought would have carried me a higher flight.

"When I enter into myself, I find not the materials of such a tempest as is comen upon me. I have been (as your Majesty knoweth best) never author of any immoderate counsel, but always desired to have things carried *suavibus modis*. I have been no avaricious oppressor of the people. I have been no haughty or intolerable or hateful man, in my conversation or carriage. I have inherited no hatred from my father, but am a good patriot born. Whence should this be? For these are the things that use to raise dislikes abroad."

And he ended by entreating the King to help him:

"That which I thirst after, as the hart after the streams, is that I may know by my matchless friend [Buckingham] that presenteth to you this letter, your Majesty's heart (which is an *abyssus* of goodness, as I am an *abyssus* of misery) towards me. I have been ever your man, and counted myself but an usufructuary of myself, the property being yours; and now making myself an oblation to do with me as may best conduce to the honour of your justice, the honour of your mercy, and the use of your service, resting as

"Clay in your Majesty's gracious hands

"Fr. St. Aldan, Canc.
"March 25, 1621."

To the world he kept up an undismayed countenance: he went down to Gorhambury, attended by troops of friends. "This man," said Prince Charles, when he met his company, "scorns to go out like a snuff." But at Gorhambury he made his will, leaving "his name to the next ages and to foreign nations;" and he wrote a prayer, which is a touching evidence of his state of mind —

"Most gracious Lord God, my merciful Father, from my youth up, my Creator, my Redeemer, my Comforter. Thou (O Lord) soundest and searchest the depths and secrets of all hearts; thou knowledgest the upright of heart, thou judgest the hypocrite, thou ponderest men's thoughts and doings as in a balance, thou measurest their intentions as with a line, vanity and crooked ways cannot be hid from thee.

"Remember (O Lord) how thy servant hath walked before thee; remember what I have first sought, and what hath been principal in mine intentions. I have loved thy assemblies, I have mourned for the divisions of thy Church, I have delighted in the brightness of thy sanctuary. This vine which thy right hand hath planted in this nation, I have ever prayed unto thee that it might have the first and the latter rain; and that it might stretch her branches to the seas and to the floods. The state and bread of the poor and oppressed have been precious in my eyes: I have hated all cruelty and hardness of heart; I have (though in a despised weed) procured the good of all men. If any have been mine enemies, I thought not of them; neither hath the sun almost set upon my displeasure; but I have been as a dove, free from superfluity of maliciousness. Thy creatures have been my books, but thy Scriptures much more. I have sought thee in the courts, fields, and gardens, but I have found thee in thy temples.

"Thousand have been my sins, and ten thousand my transgressions; but thy sanctifications have remained with me, and my heart, through thy grace, hath been an unquenched coal upon thy altar. O Lord, my strength, I have since my youth met with thee in all my ways, by thy fatherly compassions, by thy

comfortable chastisements, and by thy most visible providence. As thy favours have increased upon me, so have thy corrections; so as thou hast been alway near me, O Lord; and ever as my worldly blessings were exalted, so secret darts from thee have pierced me; and when I have ascended before men, I have descended in humiliation before thee.

"And now when I thought most of peace and honour, thy hand is heavy upon me, and hath humbled me, according to thy former loving-kindness, keeping me still in thy fatherly school, not as a bastard, but as a child. Just are thy judgements upon me for my sins, which are more in number than the sands of the sea, but have no proportion to thy mercies; for what are the sands of the sea to the sea, earth, heavens? and all these are nothing to thy mercies.

"Besides my innumerable sins, I confess before thee that I am debtor to thee for the gracious talent of thy gifts and graces, which I have misspent in things for which I was least fit; so as I may truly say, my soul hath been a stranger in the course of my pilgrimage. Be merciful unto me (O Lord) for my Saviour's sake, and receive me into thy bosom, or guide me in thy ways."

Bacon up to this time strangely, if the Committees were "open Courts," was entirely ignorant of the particulars of the charge which was accumulating against him. He had an interview with the King, which was duly reported to the House, and he placed his case before James, distinguishing between the "three cases of bribery supposed in a judge — a corrupt bargain; carelessness in receiving a gift while the cause is going on; and, what is innocent, receiving a gift after it is ended." And he meant in such words as these to place himself at the King's disposal, and ask his direction:

"For my fortune, *summa summarum* with me is, that I may not be made altogether unprofitable to do your Majesty service or honour. If your Majesty continue me as I am, I hope I shall be a new man, and shall reform things out of feeling, more than another can do out of example. If I cast part of my burden, I shall be more strong and *delivré* to bear the rest. And, to tell your Majesty what my thoughts run upon, I think of writing a story of England, and of recompiling of your laws into a better digest."

The King referred him to the House; and the House now (April 19th) prepared to gather up into "one brief" the charges against the Lord Chancellor, still, however, continuing open to receive fresh complaints.

Meanwhile the chase after abuses of all kinds was growing hotter in the Commons — abuses in patents and monopolies, which revived the complaints against referees, among whom Bacon was frequently named, and abuses in the Courts of Justice. The attack passed by and spared the Common Law Courts, as was noticed in the course of the debates; it spared Cranfield's Court, the Court of Wards. But it fell heavily on the Chancery and the Ecclesiastical Courts. "I have neither power nor will to defend Chancery," said Sir John Bennett, the judge of the Prerogative Court; but a few weeks after his turn came, and a series of as ugly charges as could well be preferred against a judge, charges of extortion as well as bribery, were reported to the House by its Committee. There can be no doubt of the grossness of many of these abuses, and the zeal against them was honest, though it would have shown more courage if it had flown at higher game; but the daily discussion of them helped to keep alive and inflame the general feeling against so great a "delinquent" as the Lord Chancellor was supposed to be. And, indeed, two of the worst charges against him were made before the Commons. One was a statement made in the House by Sir George Hastings, a member of the House, who had been the channel of Awbry's gift, that when he had told Bacon that if questioned he must admit it, Bacon's answer was: "George, if you do so, I must deny it upon my honour — upon my oath." The other was that he had given an opinion in favour of some claim of the Masters in Chancery for which he received £1200, and with which he said that all the judges agreed — an assertion which all the judges denied. Of these charges there is no contradiction.[4]

Bacon made one more appeal to the King (April 21). He hoped that, by resigning the seal, he might be spared the sentence:

"But now if not *per omnipotentiam* (as the divines speak), but *per potestatem suaviter disponentem*, your Majesty will graciously save me from a sentence

with the good liking of the House, and that cup may pass from me; it is the utmost of my desires.

"This I move with the more belief, because I assure myself that if it be reformation that is sought, the very taking away the seal, upon my general submission, will be as much in example for these four hundred years as any furder severity."

At length, informally, but for the first time distinctly, the full nature of the accusation, with its overwhelming list of cases, came to Bacon's knowledge (April 20 or 21). From the single charge, made in the middle of March, it had swelled in force and volume like a rising mountain torrent. That all these charges should have sprung out of the ground from their long concealment is strange enough. How is it that nothing was heard of them when the things happened? And what is equally strange is that these charges were substantially true and undeniable; that this great Lord Chancellor, so admirable in his despatch of business, hitherto so little complained of for wrong or unfair decisions, had been in the habit of receiving large sums of money from suitors, in some cases certainly while the suit was pending. And further, while receiving them, while perfectly aware of the evil of receiving gifts on the seat of judgment, while emphatically warning inferior judges against yielding to the temptation, he seems really to have continued unconscious of any wrong-doing while gift after gift was offered and accepted. But nothing is so strange as the way in which Bacon met the charges. Tremendous as the accusation was, he made not the slightest fight about it. Up to this time he had held himself innocent. Now, overwhelmed and stunned, he made no attempt at defence; he threw up the game without a struggle, and volunteered an absolute and unreserved confession of his guilt — that is to say, he declined to stand his trial. Only, he made an earnest application to the House of Lords, in proceeding to sentence, to be content with a general admission of guilt, and to spare him the humiliation of confessing the separate facts of alleged "bribery" which were contained in the twenty-eight Articles of his accusation. This submission, "grounded only on rumour," for the Articles of charge had not yet been communicated to him by the accusers, took

the House by surprise. “No Lord spoke to it, after it had been read, for a long time.” But they did not mean that he should escape with this. The House treated the suggestion with impatient scorn (April 24). “It is too late,” said Lord Saye. “No word of confession of any corruption in the Lord Chancellor’s submission,” said Southampton; “it stands with the justice and honour of this House not to proceed without the parties’ particular confession, or to have the parties to hear the charge, and we to hear the parties answer.” The demand of the Lords was strictly just, but cruel; the Articles were now sent to him; he had been charged with definite offences; he must answer yes or no, confess them or defend himself. A further question arose whether he should not be sent for to appear at the bar. He still held the seals. “Shall the Great Seal come to the bar?” asked Lord Pembroke. It was agreed that he was to be asked whether he would acknowledge the particulars. His answer was “that he will make no manner of defence to the charge, but meaneth to acknowledge corruption, and to make a particular confession to every point, and after that a humble submission. But he humbly craves liberty that, when the charge is more full than he finds the truth of the fact, he may make a declaration of the truth in such particulars, the charge being brief and containing not all the circumstances.” And such a confession he made. “My Lords,” he said, to those who were sent to ask whether he would stand to it, “it is my act, my hand, my heart. I beseech your Lordships be merciful to a broken reed.” This was, of course, followed by a request to the King from the House to “sequester” the Great Seal. A commission was sent to receive it (May 1). “The worse, the better,” he answered to the wish, “that it had been better with him.” “By the King’s great favour I received the Great Seal; by my own great fault I have lost it.” They intended him now to come to the bar to receive his sentence. But he was too ill to leave his bed. They did not push this point farther, but proceeded to settle the sentence (May 3). He had asked for mercy, but he did not get it. There were men who talked of every extremity short of death. Coke, indeed, in the Commons, from his store of precedents, had cited cases where judges had been hanged for bribery. But the Lords would not hear of this. “His offences foul,” said Lord Arundel; “his confession pitiful. Life not

to be touched." But Southampton, whom twenty years before he had helped to involve in Essex's ruin, urged that he should be degraded from the peerage; and asked whether, at any rate, "he whom this House thinks unfit to be a constable shall come to the Parliament." He was fined £40,000. He was to be imprisoned in the Tower during the King's pleasure. He was to be incapable of any office, place, or employment in the State or Commonwealth. He was never to sit in Parliament or come within the verge of the Court. This was agreed to, Buckingham only dissenting. "The Lord Chancellor is so sick," he said, "that he cannot live long."

What is the history of this tremendous catastrophe by which, in less than two months, Bacon was cast down from the height of fortune to become a byword of shame? He had enemies, who certainly were glad, but there is no appearance that it was the result of any plot or combination against him. He was involved, accidentally, it may almost be said, in the burst of anger excited by the intolerable dealings of others. The indignation provoked by Michell and Mompesson and their associates at that particular moment found Bacon in its path, doing, as it seemed, in his great seat of justice, even worse than they; and when he threw up all attempt at defence, and his judges had his hand to an unreserved confession of corruption, both generally, and in the long list of cases alleged against him, it is not wonderful that they came to the conclusion, as the rest of the world did, that he was as bad as the accusation painted him — a dishonest and corrupt judge. Yet it is strange that they should not have observed that not a single charge of a definitely unjust decision was brought, at any rate was proved, against him. He had taken money, they argued, and therefore he must be corrupt; but if he had taken money to pervert judgment, some instance of the iniquity would certainly have been brought forward and proved. There is no such instance to be found; though, of course, there were plenty of dissatisfied suitors; of course the men who had paid their money and lost their cause were furious. But in vain do we look for any case of proved injustice. The utmost that can be said is that in some cases he showed favour in pushing forward and expediting suits. So that the real charge against Bacon assumes, to us who have

not to deal practically with dangerous abuses, but to judge conduct and character, a different complexion. Instead of being the wickedness of perverting justice and selling his judgments for bribes, it takes the shape of allowing and sharing in a dishonourable and mischievous system of payment for service, which could not fail to bring with it temptation and discredit, and in which fair reward could not be distinguished from unlawful gain. Such a system it was high time to stop; and in this rough and harsh way, which also satisfied some personal enmities, it was stopped. We may put aside for good the charge on which he was condemned, and which in words he admitted — of being corrupt as a judge. His real fault — and it was a great one — was that he did not in time open his eyes to the wrongness and evil, patent to every one, and to himself as soon as pointed out, of the traditional fashion in his court of eking out by irregular gifts the salary of such an office as his.

Thus Bacon was condemned both to suffering and to dishonour; and, as has been observed, condemned without a trial. But it must also be observed that it was entirely owing to his own act that he had not a trial, and with a trial the opportunity of cross-examining witnesses and of explaining openly the matters urged against him. The proceedings in the Lords were preliminary to the trial; when the time came, Bacon, of his own choice, stopped them from going farther, by his confession and submission. Considering the view which he claimed to take of his own case, his behaviour was wanting in courage and spirit. From the moment that the attack on him shifted from a charge of authorising illegal monopolies to a charge of personal corruption, he never fairly met his accusers. The distress and anxiety, no doubt, broke down his health; and twice, when he was called upon to be in his place in the House of Lords, he was obliged to excuse himself on the ground that he was too ill to leave his bed. But between the time of the first charge and his condemnation seven weeks elapsed; and though he was able to go down to Gorhambury, he never in that time showed himself in the House of Lords. Whether or not, while the Committees were busy in collecting the charges, he would have been allowed to take part, to put questions to the witnesses, or to produce his own, he never attempted to do so;

and by the course he took there was no other opportunity. To have stood his trial could hardly have increased his danger, or aggravated his punishment; and it would only have been worthy of his name and place, if not to have made a fight for his character and integrity, at least to have bravely said what he had made up his mind to admit, and what no one could have said more nobly and pathetically, in open Parliament. But he was cowed at the fierceness of the disapprobation manifest in both Houses. He shrunk from looking his peers and his judges in the face. His friends obtained for him that he should not be brought to the bar, and that all should pass in writing. But they saved his dignity at the expense of his substantial reputation. The observation that the charges against him were not sifted by cross-examination applies equally to his answers to them. The allegations of both sides would have come down to us in a more trustworthy shape if the case had gone on. But to give up the struggle, and to escape by any humiliation from a regular public trial, seems to have been his only thought when he found that the King and Buckingham could not or would not save him.

But the truth is that he knew that a trial of this kind was a trial only in name. He knew that, when a charge of this sort was brought, it was not meant to be really investigated in open court, but to be driven home by proofs carefully prepared beforehand, against which the accused had little chance. He knew, too, that in those days to resist in earnest an accusation was apt to be taken as an insult to the court which entertained it. And further, for the prosecutor to accept a submission and confession without pushing to the formality of a public trial, and therefore a public exposure, was a favour. It was a favour which by his advice, as against the King's honour, had been refused to Suffolk; it was a favour which, in a much lighter charge, had by his advice been refused to his colleague Yelverton only a few months before, when Bacon, in sentencing him, took occasion to expatiate on the heinous guilt of misprisions or mistakes in men in high places. The humiliation was not complete without the trial, but it was for humiliation and not fair investigation that the trial was wanted. Bacon knew that the trial would only prolong his agony, and give a further triumph to his enemies.

That there was any plot against Bacon, and much more that Buckingham to save himself was a party to it, is of course absurd. Buckingham, indeed, was almost the only man in the Lords who said anything for Bacon, and, alone, he voted against his punishment. But considering what Buckingham was, and what he dared to do when he pleased, he was singularly cool in helping Bacon. Williams, the astute Dean of Westminster, who was to be Bacon's successor as Lord Keeper, had got his ear, and advised him not to endanger himself by trying to save delinquents. He did not. Indeed, as the inquiry went on, he began to take the high moral ground; he was shocked at the Chancellor's conduct; he would not have believed that it could have been so bad; his disgrace was richly deserved. Buckingham kept up appearances by saying a word for him from time to time in Parliament, which he knew would be useless, and which he certainly took no measures to make effective. It is sometimes said that Buckingham never knew what dissimulation was. He was capable, at least, of the perfidy and cowardice of utter selfishness. Bacon's conspicuous fall diverted men's thoughts from the far more scandalous wickedness of the great favourite. But though there was no plot, though the blow fell upon Bacon almost accidentally, there were many who rejoiced to be able to drive it home. We can hardly wonder that foremost among them was Coke. This was the end of the long rivalry between Bacon and Coke, from the time that Essex pressed Bacon against Coke in vain to the day when Bacon as Chancellor drove Coke from his seat for his bad law, and as Privy Councillor ordered him to be prosecuted in the Star Chamber for riotously breaking open men's doors to get his daughter. The two men thoroughly disliked and undervalued one another. Coke made light of Bacon's law. Bacon saw clearly Coke's narrowness and ignorance out of that limited legal sphere in which he was supposed to know everything, his prejudiced and interested use of his knowledge, his coarseness and insolence. But now in Parliament Coke was supreme, "our Hercules," as his friends said. He posed as the enemy of all abuses and corruption. He brought his unrivalled, though not always accurate, knowledge of law and history to the service of the Committees, and took care that the Chancellor's name should not be forgotten when it could

be connected with some bad business of patent or Chancery abuse. It was the great revenge of the Common Law on the encroaching and insulting Chancery which had now proved so foul. And he could not resist the opportunity of marking the revenge of professional knowledge over Bacon's airs of philosophical superiority. "To restore things to their original" was his sneer in Parliament, "this, *Instauratio Magna. Instaurare paras — Instaura leges justitiamque prius*." [5]

The charge of corruption was as completely a surprise to Bacon as it was to the rest of the world. And yet, as soon as the blot was hit, he saw in a moment that his position was hopeless — he knew that he had been doing wrong; though all the time he had never apparently given it a thought, and he insisted, what there is every reason to believe, that no present had induced him to give an unjust decision. It was the power of custom over a character naturally and by habit too pliant to circumstances. Custom made him insensible to the evil of receiving recommendations from Buckingham in favour of suitors. Custom made him insensible to the evil of what it seems every one took for granted — receiving gifts from suitors. In the Court of James I. the atmosphere which a man in office breathed was loaded with the taint of gifts and bribes. Presents were as much the rule, as indispensable for those who hoped to get on, as they are now in Turkey. Even in Elizabeth's days, when Bacon was struggling to win her favour, and was in the greatest straits for money, he borrowed £500 to buy a jewel for the Queen. When he was James's servant the giving of gifts became a necessity. New Year's Day brought round its tribute of gold vases and gold pieces to the King and Buckingham. And this was the least. Money was raised by the sale of officers and titles. For £20,000, having previously offered £10,000 in vain, the Chief-Justice of England, Montague, became Lord Mandeville and Treasurer. The bribe was sometimes disguised: a man became a Privy Councillor, like Cranfield, or a Chief-Justice, like Ley (afterwards "the good Earl," "unstained with gold or fee," of Milton's Sonnet), by marrying a cousin or a niece of Buckingham. When Bacon was made a Peer, he had also given him "the making of a Baron;" that is to say, he might raise money by bargaining with some one

who wanted a peerage; when, however, later on, he asked Buckingham for a repetition of the favour, Buckingham gave him a lecture on the impropriety of prodigality, which should make it seem that "while the King was asking money of Parliament with one hand he was giving with the other." How things were in Chancery in the days of the Queen, and of Bacon's predecessors, we know little; but Bacon himself implies that there was nothing new in what he did. "All my lawyers," said James, "are so bred and nursed in corruption that they cannot leave it." Bacon's Chancellorship coincided with the full bloom of Buckingham's favour; and Buckingham set the fashion, beyond all before him, of extravagance in receiving and spending. Encompassed by such assumptions and such customs, Bacon administered the Chancery. Suitors did there what people did everywhere else; they acknowledged by a present the trouble they gave, or the benefit they gained. It may be that Bacon's known difficulties about money, his expensive ways and love of pomp, his easiness of nature, his lax discipline over his servants, encouraged this profuseness of giving. And Bacon let it be. He asked no questions; he knew that he worked hard and well; he knew that it could go on without affecting his purpose to do justice "from the greatest to the groom." A stronger character, a keener conscience, would have faced the question, not only whether he was not setting the most ruinous of precedents, but whether any man could be so sure of himself as to go on dealing justly with gifts in his hands. But Bacon, who never dared to face the question, what James was, what Buckingham was, let himself be spellbound by custom. He knew in the abstract that judges ought to have nothing to do with gifts, and had said so impressively in his charges to them. Yet he went on self-complacent, secure, almost innocent, building up a great tradition of corruption in the very heart of English justice, till the challenge of Parliament, which began in him its terrible and relentless, but most unequal, prosecution of justice against ministers who had betrayed the commonwealth in serving the Crown, woke him from his dream, and made him see, as others saw it, the guilt of a great judge who, under whatever extenuating pretext, allowed the suspicion to arise that he might sell justice. "In the midst of a state of as great affliction as mortal man can endure,"

he wrote to the Lords of the Parliament, in making his submission, “I shall begin with the professing gladness in some things. The first is that hereafter the greatness of a judge or magistrate shall be no sanctuary or protection of guiltiness, which is the beginning of a golden world. The next, that after this example it is like that judges will fly from anything that is in the likeness of corruption as from a serpent.” Bacon’s own judgment on himself, deliberately repeated, is characteristic, and probably comes near the truth. “Howsoever, I acknowledge the sentence just and for reformation’s sake fit,” he writes to Buckingham from the Tower, where, for form’s sake, he was imprisoned for a few miserable days, he yet had been “the justest Chancellor that hath been in the five changes that have been since Sir Nicolas Bacon’s time.” He repeated the same thing yet more deliberately in later times. “*I was the justest judge that was in England these fifty years. But it was the justest censure in Parliament that was these two hundred years.*”

He might have gone on to add, “the Wisest Counsellor; and yet none on whom rested heavier blame; none of whom England might more justly complain.” Good counsels given, submissive acquiescence in the worst — this is the history of his statesmanship. Bacon, whose eye was everywhere, was not sparing of his counsels. On all the great questions of the time he has left behind abundant evidence, not only of what he thought, but of what he advised. And in every case these memorials are marked with the insight, the independence, the breadth of view, and the moderation of a mind which is bent on truth. He started, of course, from a basis which we are now hardly able to understand or allow for, the idea of absolute royal power and prerogative which James had enlarged and hardened out of the Kingship of the Tudors, itself imperious and arbitrary enough, but always seeking, with a tact of which James was incapable, to be in touch and sympathy with popular feeling. But it was a basis which in principle every one of any account as yet held or professed to hold, and which Bacon himself held on grounds of philosophy and reason. He could see no hope for orderly and intelligent government except in a ruler whose wisdom had equal strength to assert itself; and he looked down with incredulity and scorn on the

notion of anything good coming out of what the world then knew or saw of popular opinion or parliamentary government. But when it came to what was wise and fitting for absolute power to do in the way of general measures and policy, he was for the most part right. He saw the inexorable and pressing necessity of putting the finance of the kingdom on a safe footing. He saw the necessity of a sound and honest policy in Ireland. He saw the mischief of the Spanish alliance in spite of his curious friendship with Gondomar, and detected the real and increasing weakness of the Spanish monarchy, which still awed mankind. He saw the growing danger of abuses in Church and State which were left untouched, and were protected by the punishment of those who dared to complain of them. He saw the confusion and injustice of much of that common law of which the lawyers were so proud; and would have attempted, if he had been able, to emulate Justinian, and anticipate the Code Napoleon, by a rational and consistent digest. Above all, he never ceased to impress on James the importance, and, if wisely used, the immense advantages, of his Parliaments. Himself, for great part of his life, an active and popular member of the House of Commons, he saw that not only it was impossible to do without it, but that, if fairly, honourably, honestly dealt with, it would become a source of power and confidence which would double the strength of the Government both at home and abroad. Yet of all this wisdom nothing came. The finance of the kingdom was still ruined by extravagance and corruption in a time of rapidly-developing prosperity and wealth. The wounds of Ireland were unhealed. It was neither peace nor war with Spain, and hot infatuation for its friendship alternated with cold fits of distrust and estrangement. Abuses flourished and multiplied under great patronage. The King's one thought about Parliament was how to get as much money out of it as he could, with as little other business as possible. Bacon's counsels were the prophecies of Cassandra in that so prosperous but so disastrous reign. All that he did was to lend the authority of his presence, in James's most intimate counsels, to policy and courses of which he saw the unwisdom and the perils. James and Buckingham made use of him when they

wanted. But they would have been very different in their measures and their statesmanship if they had listened to him.

Mirabeau said, what of course had been said before him, “On ne vaut, dans la partie exécutive de la vie humaine, que par le caractère.” This is the key to Bacon’s failures as a judge and as a statesman, and why, knowing so much more and judging so much more wisely than James and Buckingham, he must be identified with the misdoings of that ignoble reign. He had the courage of his opinions; but a man wants more than that: he needs the manliness and the public spirit to enforce them, if they are true and salutary. But this is what Bacon had not. He did not mind being rebuffed; he knew that he was right, and did not care. But to stand up against the King, to contradict him after he had spoken, to press an opinion or a measure on a man whose belief in his own wisdom was infinite, to risk not only being set down as a dreamer, but the King’s displeasure, and the ruin of being given over to the will of his enemies, this Bacon had not the fibre or the stiffness or the self-assertion to do. He did not do what a man of firm will and strength of purpose, a man of high integrity, of habitual resolution, would have done. Such men insist when they are responsible, and when they know that they are right; and they prevail, or accept the consequences. Bacon, knowing all that he did, thinking all that he thought, was content to be the echo and the instrument of the cleverest, the foolishest, the vainest, the most pitiably unmanly of English kings.

CHAPTER VII.

BACON’S LAST YEARS.

[1621-1626.]

The tremendous sentences of those days, with their crushing fines, were often worse in sound than in reality. They meant that for the moment a man was defeated and disgraced. But it was quite understood that it did not necessarily follow that they would be enforced in all their severity. The fine might be

remitted, the imprisonment shortened, the ban of exclusion taken off. At another turn of events or caprice the man himself might return to favour, and take his place in Parliament or the Council as if nothing had happened. But, of course, a man might have powerful enemies, and the sentence might be pressed. His fine might be assigned to some favourite; and he might be mined, even if in the long run he was pardoned; or he might remain indefinitely a prisoner. Raleigh had remained to perish at last in dishonour. Northumberland, Raleigh's fellow-prisoner, after fifteen years' captivity, was released this year. The year after Bacon's condemnation such criminals as Lord and Lady Somerset were released from the Tower, after a six years' imprisonment. Southampton, the accomplice of Essex, Suffolk, sentenced as late as 1619 by Bacon for embezzlement, sat in the House of Peers which judged Bacon, and both of them took a prominent part in judging him.

To Bacon the sentence was ruinous. It proved an irretrievable overthrow as regards public life, and, though some parts of it were remitted and others lightened, it plunged his private affairs into trouble which weighed heavily on him for his few remaining years. To his deep distress and horror he had to go to the Tower to satisfy the terms of his sentence. "Good my Lord," he writes to Buckingham, May 31, "procure my warrant for my discharge this day. Death is so far from being unwelcome to me, as I have called for it as far as Christian resolution would permit any time these two months. But to die before the time of his Majesty's grace, in this disgraceful place, is even the worst that could be." He was released after two or three days, and he thanks Buckingham (June 4) for getting him out to do him and the King faithful service— "wherein, by the grace of God, your Lordship shall find that my adversity hath neither *spent* nor *pent* my spirits." In the autumn his fine was remitted — that is, it was assigned to persons nominated by Bacon, who, as the Crown had the first claim on all his goods, served as a protection against his other creditors, who were many and some of them clamorous — and it was followed by his pardon. His successor, Williams, now Bishop of Lincoln, who stood in great fear of Parliament, tried to stop the pardon. The assignment of the fine, he said to Buckingham, was a gross

job— “it is much spoken against, not for the matter (for no man objects to that), but for the manner, which is full of knavery, and a wicked precedent. For by this assignment he is protected from all his creditors, which (I dare say) was neither his Majesty’s nor your Lordship’s meaning.” It was an ill-natured and cowardly piece of official pedantry to plunge deeper a drowning man; but in the end the pardon was passed. It does not appear whether Buckingham interfered to overrule the Lord Keeper’s scruples. Buckingham was certainly about this time very much out of humour with Bacon, for a reason which, more than anything else, discloses the deep meanness which lurked under his show of magnanimity and pride. He had chosen this moment to ask Bacon for York House. This meant that Bacon would never more want it. Even Bacon was stung by such a request to a friend in his condition, and declined to part with it; and Buckingham accordingly was offended, and made Bacon feel it. Indeed, there is reason to think with Mr. Spedding that for the sealing of his pardon Bacon was indebted to the good offices with the King, not of Buckingham, but of the Spaniard, Gondomar, with whom Bacon had always been on terms of cordiality and respect, and who at this time certainly “brought about something on his behalf, which his other friends either had not dared to attempt or had not been able to obtain.”

But, though Bacon had his pardon, he had not received permission to come within the verge of the Court, which meant that he could not live in London. His affairs were in great disorder, his health was bad, and he was cut off from books. He wrote an appeal to the Peers who had condemned him, asking them to intercede with the King for the enlargement of his liberty. “I am old,” he wrote, “weak, ruined, in want, a very subject of pity.” The Tower at least gave him the neighbourhood of those who could help him. “There I could have company, physicians, conference with my creditors and friends about my debts and the necessities of my estate, helps for my studies and the writings I have in hand. Here I live upon the sword-point of a sharp air, endangered if I go abroad, dulled if I stay within, solitary and comfortless, without company, banished from all opportunities to treat with any to do myself good, and to help out my wrecks.” If

the Lords would recommend his suit to the King, “You shall do a work of charity and nobility, you shall do me good, you shall do my creditors good, and it may be you shall do posterity good, if out of the carcase of dead and rotten greatness (as out of Samson’s lion) there may be honey gathered for the use of future times.” But Parliament was dissolved before the touching appeal reached them; and Bacon had to have recourse to other expedients. He consulted Selden about the technical legality of the sentence. He appealed to Buckingham, who vouchsafed to appear more placable. Once more he had recourse to Gondomar, “in that solitude of friends, which is the base-court of adversity,” as a man whom he had “observed to have the magnanimity of his own nation and the cordiality of ours, and I am sure the wit of both” — and who had been equally kind to him in “both his fortunes;” and he proposed through Gondomar to present Gorhambury to Buckingham “for nothing,” as a peace-offering. But the purchase of his liberty was to come in another way. Bacon had reconciled himself to giving up York House; but now Buckingham would not have it: he had found another house, he said, which suited him as well. That is to say, he did not now choose to have York House from Bacon himself; but he meant to have it. Accordingly, Buckingham let Bacon know through a friend of Bacon’s, Sir Edward Sackville, that the price of his liberty to live in London was the cession of York House — not to Buckingham, but of all men in the world, to Lionel Cranfield, the man who had been so bitter against Bacon in the House of Commons. This is Sir Edward Sackville’s account to Bacon of his talk with Buckingham; it is characteristic of every one concerned:

“In the forenoon he laid the law, but in the afternoon he preached the gospel; when, after some revivations of the old distaste concerning York House, he most nobly opened his heart unto me; wherein I read that which augured much good towards you. After which revelation the book was again sealed up, and must in his own time only by himself be again manifested unto you. I have leave to remember some of the vision, and am not forbidden to write it. He vowed (not court like), but constantly to appear your friend so much, as if his Majesty should abandon the care of you, you should share his fortune with him. He

pleased to tell me how much he had been beholden to you, how well he loved you, how unkindly he took the denial of your house (for so he will needs understand it); but the close for all this was harmonious, since he protested he would seriously begin to study your ends, now that the world should see he had no ends on you. He is in hand with the work, and therefore will by no means accept of your offer, though I can assure you the tender hath much won upon him, and mellowed his heart towards you, and your genius directed you aright when you writ that letter of denial to the Duke. The King saw it, and all the rest, which made him say unto the Marquis, you played an after-game well; and that now he had no reason to be much offended.

"I have already talked of the Revelation, and now am to speak in apocalyptical language, which I hope you will rightly comment: whereof if you make difficulty, the bearer can help you with the key of the cypher.

"My Lord Falkland by this time hath showed you London from Highgate. *If York House were gone, the town were yours*, and all your straitest shackles clean off, besides more comfort than the city air only. The Marquis would be exceeding glad the Treasurer had it. This I know; yet this you must not know from me. Bargain with him presently, upon as good conditions as you can procure, so you have direct motion from the Marquis to let him have it. Seem not to dive into the secret of it, though you are purblind if you see not through it. I have told Mr. Meautys how I would wish your Lordship now to make an end of it. From him I beseech you take it, and from me only the advice to perform it. If you part not speedily with it, you may defer the good which is approaching near you, and disappointing other aims (which must either shortly receive content or never), perhaps anew yield matter of discontent, though you may be indeed as innocent as before. Make the Treasurer believe that since the Marquis will by no means accept of it, and that you must part with it, you are more willing to pleasure him than anybody else, because you are given to understand my Lord Marquis so inclines; which inclination, if the Treasurer shortly send unto you about it, desire may be more clearly manifested than as yet it hath been; since as I remember none hitherto hath told you *in terminis terminantibus* that the

Marquis desires you should gratify the Treasurer. I know that way the hare runs, and that my Lord Marquis longs until Cranfield hath it; and so I wish too, for your good; yet would not it were absolutely passed until my Lord Marquis did send or write unto you to let him have it; for then his so disposing of it were but the next degree removed from the immediate acceptance of it, and your Lordship freed from doing it otherwise than to please him, and to comply with his own will and way."

It need hardly be said that when Cranfield got it, it soon passed into Buckingham's hands. "Bacon consented to part with his house, and Buckingham in return consented to give him his liberty." Yet Bacon could write to him, "low as I am, I had rather sojourn in a college in Cambridge than recover a good fortune by any other but yourself." "As for York House," he bids Toby Matthews to let Buckingham know, "that *whether in a straight line or a compass line*, I meant it for his Lordship, in the way which I thought might please him best." But liberty did not mean either money or recovered honour. All his life long he had made light of being in debt; but since his fall this was no longer a condition easy to bear. He had to beg some kind of pension of the King. He had to beg of Buckingham; "a small matter for my debts would do me more good now than double a twelvemonth hence. I have lost six thousand by the year, besides caps and courtesies. Two things I may assure your Lordship. The one, that I shall lead such a course of life as whatsoever the King doth for me shall rather sort to his Majesty's and your Lordship's honour than to envy; the other, that whatsoever men talk, I can play the good husband, and the King's bounty shall not be lost."

It might be supposed from the tone of these applications that Bacon's mind was bowed down and crushed by the extremity of his misfortune. Nothing could be farther from the truth. In his behaviour during his accusation there was little trace of that high spirit and fortitude shown by far inferior men under like disasters. But the moment the tremendous strain of his misfortunes was taken off, the vigour of his mind recovered itself. The buoyancy of his hopefulness, the elasticity of his energy, are as remarkable as his profound depression. When the

end was approaching, his thoughts turned at once to other work to be done, ready in plan, ready to be taken up and finished. At the close of his last desperate letter to the King he cannot resist finishing at once with a jest, and with the prospect of two great literary undertakings —

"This is my last suit which I shall make to your Majesty in this business, prostrating myself at your mercy seat, after fifteen years service, wherein I have served your Majesty in my poor endeavours with an entire heart, and, as I presumed to say unto your Majesty, am still a virgin for matters that concern your person and crown; and now only craving that after eight steps of honour I be not precipitated altogether. But because he that hath taken bribes is apt to give bribes, I will go furder, and present your Majesty with a bribe. For if your Majesty will give me peace and leisure, and God give me life, I will present your Majesty with a good history of England, and a better digest of your laws."

The Tower did, indeed, to use a word of the time, "mate" him. But the moment he was out of it, his quick and fertile mind was immediately at work in all directions, reaching after all kinds of plans, making proof of all kinds of expedients to retrieve the past, arranging all kinds of work according as events might point out the way. His projects for history, for law, for philosophy, for letters, occupy quite as much of his thoughts as his pardon and his debts; and they, we have seen, occupied a good deal. If he was pusillanimous in the moment of the storm, his spirit, his force, his varied interests, returned the moment the storm was past. His self-reliance, which was boundless, revived. He never allowed himself to think, however men of his own time might judge him, that the future world would mistake him. "*Aliquis fui inter vivos*," he writes to Gondomar, "*neque omnino intermoriar apud posteros*." Even in his time he did not give up the hope of being restored to honour and power. He compared himself to Demosthenes, to Cicero, to Seneca, to Marcus Livius, who had been condemned for corrupt dealings as he had been, and had all recovered favour and position. Lookers-on were puzzled and shocked. "He has," writes Chamberlain, "no manner of feeling of his fall, but continuing vain and idle in all his humours

as when he was at the highest." "I am said," Bacon himself writes, "to have a feather in my head."

Men were mistaken. His thoughts were, for the moment, more than ever turned to the future; but he had not given up hope of having a good deal to say yet to the affairs of the present. Strangely enough, as it seems to us, in the very summer after that fatal spring of 1621 the King called for his opinion concerning the reformation of Courts of Justice; and Bacon, just sentenced for corruption and still unpardoned, proceeds to give his advice as if he were a Privy Councillor in confidential employment. Early in the following year he, according to his fashion, surveyed his position, and drew up a paper of memoranda, like the notes of the *Commentarius Solutus* of 1608, about points to be urged to the King at an interview. Why should not the King employ him again? "Your Majesty never chid me;" and as to his condemnation, "as the fault was not against your Majesty, so my fall was not your act." "Therefore," he goes on, "if your Majesty do at any time find it fit for your affairs to employ me publicly upon the stage, I shall so live and spend my time as neither discontinuance shall disable me nor adversity shall discourage me, nor anything that I do give any new scandal or envy upon me." He insists very strongly that the King's service never miscarried in his hands, for he simply carried out the King's wise counsels. "That his Majesty's business never miscarried in my hands I do not impute to any extraordinary ability in myself, but to my freedom from any particular, either friends or ends, and my careful receipt of his directions, being, as I have formerly said to him, but as a bucket and cistern to that fountain — a bucket to draw forth, a cistern to preserve." He is not afraid of the apparent slight to the censure passed on him by Parliament. "For envy, it is an almanack of the old year, and as a friend of mine said, *Parliament died penitent towards me*." "What the King bestows on me will be further seen than on Paul's steeple." "There be mountebanks, as well in the civil body as in the natural; I ever served his Majesty with modesty; no shouting, no undertaking." In the odd fashion of the time — a fashion in which no one more delighted than himself — he lays hold of sacred words to give point to his argument.

"I may allude to the three petitions of the Litany — *Libera nos Domine*; *parce nobis, Domine*; *exaudi nos, Domine*. In the first, I am persuaded that his Majesty had a mind to do it, and could not conveniently in respect of his affairs. In the second, he hath done it in my fine and pardon. In the third, he hath likewise performed, in restoring to the light of his countenance."

But if the King did not see fit to restore him to public employment, he would be ready to give private counsel; and he would apply himself to any "literary province" that the King appointed. "I am like ground fresh. If I be left to myself I will graze and bear natural philosophy; but if the King will plough me up again, and sow me with anything, I hope to give him some yield." "Your Majesty hath power; I have faith. Therefore a miracle may be wrought." And he proposes, for matters in which his pen might be useful, first, as "active" works, the recompiling of laws; the disposing of wards, and generally the education of youth; the regulation of the jurisdiction of Courts; and the regulation of Trade; and for "contemplative," the continuation of the history of Henry VIII.; a general treatise *de Legibus et Justitia*; and the "Holy War" against the Ottomans.

When he wrote this he had already shown what his unquelled energy could accomplish. In the summer and autumn after his condemnation, amid all the worries and inconveniences of that time, moving about from place to place, without his books, and without free access to papers and records, he had written his *History of Henry VII*. The theme had, no doubt, been long in his head. But the book was the first attempt at philosophical history in the language, and it at once takes rank with all that the world had yet seen, in classical times and more recently in Italy, of such history. He sent the book, among other persons, to the Queen of Bohemia, with a phrase, the translation of a trite Latin commonplace, which may have been the parent of one which became famous in our time; and with an expression of absolute confidence in the goodness of his own work.

"I have read in books that it is accounted a great bliss for a man to have *Leisure with Honour*. That was never my fortune. For time was, I had Honour without Leisure; and now I have *Leisure without Honour*.... But my desire is now to have *Leisure without Loitering*, and not to become an abbey-lubber, as

the old proverb was, but to yield some fruit of my private life.... If King Henry were alive again, I hope verily he would not be so angry with me for not flattering him, as well pleased in seeing himself so truly described in colours that will last and be believed."

But the tide had turned against him for good. A few fair words, a few grudging doles of money to relieve his pressing wants, and those sometimes intercepted and perhaps never rightly granted from an Exchequer which even Cranfield's finance could not keep filled, were all the graces that descended upon him from those fountains of goodness in which he professed to trust with such boundless faith. The King did not want him, perhaps did not trust him, perhaps did not really like him. When the *Novum Organum* came out, all that he had to say about it was in the shape of a profane jest that "it was like the peace of God — it passed all understanding." Other men had the ear of Buckingham; shrewd, practical men of business like Cranfield, who hated Bacon's loose and careless ways, or the clever ecclesiastic Williams, whose counsel had steered Buckingham safely through the tempest that wrecked Bacon, and who, with no legal training, had been placed in Bacon's seat. "I thought," said Bacon, "that I should have known my successor." Williams, for his part, charged Bacon with trying to cheat his creditors, when his fine was remitted. With no open quarrel, Bacon's relations to Buckingham became more ceremonious and guarded; the "My singular good Lord" of the former letters becomes, now that Buckingham had risen so high and Bacon had sunk so low, "Excellent Lord." The one friend to whom Bacon had once wished to owe everything had become the great man, now only to be approached with "sweet meats" and elaborate courtesy. But it was no use. His full pardon Bacon did not get, though earnestly suing for it, that he might not "die in ignominy." He never sat again in Parliament. The Provostship of Eton fell vacant, and Bacon's hopes were kindled. "It were a pretty cell for my fortune. The College and School I do not doubt but I shall make to flourish." But Buckingham had promised it to some nameless follower, and by some process of exchange it went to Sir Henry Wotton. His English history was offered in vain. His digest of the Laws was offered in vain. In vain

he wrote a memorandum on the regulation of usury; notes of advice to Buckingham; elaborate reports and notes of speeches about a war with Spain, when that for a while loomed before the country. In vain he affected an interest which he could hardly have felt in the Spanish marriage, and the escapade of Buckingham and Prince Charles, which "began," he wrote, "like a fable of the poets, but deserved all in a piece a worthy narration." In vain, when the Spanish marriage was off and the French was on, he proposed to offer to Buckingham "his service to live a summer as upon mine own delight at Paris, to settle a fast intelligence between France and us;" "I have somewhat of the French," he said, "I love birds, as the King doth." Public patronage and public employment were at an end for him. His petitions to the King and Buckingham ceased to be for office, but for the clearing of his name and for the means of living. It is piteous to read the earnestness of his requests. "Help me (dear Sovereign lord and master), pity me so far as that I who have borne a bag be not now in my age forced in effect to bear a wallet." The words are from a carefully-prepared and rhetorical letter which was not sent, but they express what he added to a letter presenting the *De Augmentis; "det Vestra Majestas obolum Belisario*." Again, "I prostrate myself at your Majesty's feet; I your ancient servant, now sixty-four years old in age, and three years and five months old in misery. I desire not from your Majesty means, nor place, nor employment, but only after so long a time of expiation, a complete and total remission of the sentence of the Upper House, to the end that blot of ignominy may be removed from me, and from my memory and posterity, that I die not a condemned man, but may be to your Majesty, as I am to God, *nova creatura*." But the pardon never came. Sir John Bennett, who had been condemned as a corrupt judge by the same Parliament, and between whose case and Bacon's there was as much difference, "I will not say as between black and white, but as between black and gray," had got his full pardon, "and they say shall sit in Parliament." Lord Suffolk had been one of Bacon's judges. "I hope I deserve not to be the only outcast." But whether the Court did not care, or whether, as he once suspected, there was some old enemy like Coke, who "had a tooth against him," and was watching any favour shown

him, he died without his wish being fulfilled, “to live out of want and to die out of ignominy.”

Bacon was undoubtedly an impoverished man, and straitened in his means; but this must be understood as in relation to the rank and position which he still held, and the work which he wanted done for the *Instauratio*. His will, dated a few months before his death, shows that it would be a mistake to suppose that he was in penury. He no doubt often wanted ready money, and might be vexed by creditors. But he kept a large household, and was able to live in comfort at Gray’s Inn or at Gorhambury. A man who speaks in his will of his “four coach geldings and his best caroache,” besides many legacies, and who proposes to found two lectures at the universities, may have troubles about debts and be cramped in his expenditure, but it is only relatively to his station that he can be said to be poor. And to subordinate officers of the Treasury who kept him out of his rights, he could still write a sharp letter, full of his old force and edge. A few months before his death he thus wrote to the Lord Treasurer Ley, who probably had made some difficulty about a claim for money:

“MY LORD, — I humbly entreat your Lordship, and (if I may use the word) advise your Lordship to make me a better answer. Your Lordship is interested in honour, in the opinion of all that hear how I am dealt with. If your Lordship malice me for Long’s cause, surely it was one of the justest businesses that ever was in Chancery. I will avouch it; and how deeply I was tempted therein, your Lordship knoweth best. Your Lordship may do well to think of your grave as I do of mine; and to beware of hardness of heart. And as for fair words, it is a wind by which neither your Lordship nor any man else can sail long. Howsoever, I am the man that shall give all due respects and reverence to your great place.

“20th June, 1625.
FR. ST. ALBAN.”

Bacon always claimed that he was not “vindicative.” But considering how Bishop Williams, when he was Lord Keeper, had charged Bacon with “knavery” and “deceiving his creditors” in the arrangements about his fine, it is not a little strange to find that at the end of his life Bacon had so completely made friends with him that he chose him as the person to whom he meant to leave his speeches and letters, which he was “willing should not be lost,” and also the charge of superintending two foundations of £200 a year for Natural Science at the universities. And the Bishop accepted the charge.

The end of this, one of the most pathetic of histories, was at hand; the end was not the less pathetic because it came in so homely a fashion. On a cold day in March he stopped his coach in the snow on his way to Highgate, to try the effect of cold in arresting putrefaction. He bought a hen from a woman by the way, and stuffed it with snow. He was taken with a bad chill, which forced him to stop at a strange house, Lord Arundel’s, to whom he wrote his last letter — a letter of apology for using his house. He did not write the letter as a dying man. But disease had fastened on him. A few days after, early on Easter morning, April 9, 1626, he passed away. He was buried at St. Albans, in the Church of St. Michael, “the only Christian church within the walls of old Verulam.” “For my name and memory,” he said in his will, “I leave it to men’s charitable speeches, and to foreign nations and the next ages.” So he died: the brightest, richest, largest mind but one, in the age which had seen Shakespeare and his fellows; so bright and rich and large that there have been found those who identify him with the writer of *Hamlet* and *Othello*. That is idle. Bacon could no more have written the plays than Shakespeare could have prophesied the triumphs of natural philosophy. So ended a career, than which no other in his time had grander and nobler aims — aims, however mistaken, for the greatness and good of England; aims for the enlargement of knowledge and truth, and for the benefit of mankind. So ended a career which had mounted slowly and painfully, but resolutely, to the highest pinnacle of greatness — greatness full of honour and beneficent activity — suddenly to plunge down to depths where honour and hope were irrecoverable. So closed, in disgrace and disappointment and neglect, the last sad

chapter of a life which had begun so brightly, which had achieved such permanent triumphs, which had lost itself so often in the tangles of insincerity and evil custom, which was disfigured and marred by great misfortunes, and still more by great mistakes of his own, which was in many ways misunderstood not only by his generation but by himself, but which he left in the constant and almost unaccountable faith that it would be understood and greatly honoured by posterity. With all its glories, it was the greatest shipwreck, the greatest tragedy, of an age which saw many.

But in these gloomy and dreary days of depression and vain hope to which his letters bear witness— "three years and five months old in misery," again later, "a long cleansing week of five years' expiation and more" — his interest in his great undertaking and his industry never flagged. The King did not want what he offered, did not want his histories, did not want his help about law. Well, then, he had work of his own on which his heart was set; and if the King did not want his time, he had the more for himself. Even in the busy days of his Chancellorship he had prepared and carried through the press the *Novum Organum*, which he published on the very eve of his fall. It was one of those works which quicken a man's powers, and prove to him what he can do; and it had its effect. His mind was never more alert than in these years of adversity, his labour never more indefatigable, his powers of expression never more keen and versatile and strong. Besides the political writings of grave argument for which he found time, these five years teem with the results of work. In the year before his death he sketched out once more, in a letter to a Venetian correspondent, Fra Fulgenzio, the friend of Sarpi, the plan of his great work, on which he was still busy, though with fast diminishing hopes of seeing it finished. To another foreign correspondent, a professor of philosophy at Annecy, and a distinguished mathematician, Father Baranzan, who had raised some questions about Bacon's method, and had asked what was to be done with metaphysics, he wrote in eager acknowledgment of the interest which his writings had excited, and insisting on the paramount necessity, above everything, of the observation of facts and of natural history, out of which philosophy may be built. But the most

comprehensive view of his intellectual projects in all directions, "the fullest account of his own personal feelings and designs as a writer which we have from his own pen," is given in a letter to the venerable friend of his early days, Bishop Andrewes, who died a few months after him. Part, he says, of his *Instauratio*, "the work in mine own judgement (*si nunquam fallit imago*) I do most esteem," has been published; but because he "doubts that it flies too high over men's heads," he proposes "to draw it down to the sense" by examples of Natural History. He has enlarged and translated the *Advancement* into the *De Augmentis*. "Because he could not altogether desert the civil person that he had borne," he had begun a work on Laws, intermediate between philosophical jurisprudence and technical law. He had hoped to compile a digest of English law, but found it more than he could do alone, and had laid it aside. The *Instauratio* had contemplated the good of men "in the dowries of nature;" the *Laws*, their good "in society and the dowries of government." As he owed duty to his country, and could no longer do it service, he meant to do it honour by his history of Henry VII. His *Essays* were but "recreations;" and remembering that all his writings had hitherto "gone all into the City and none into the Temple," he wished to make "some poor oblation," and therefore had chosen an argument mixed of religious and civil considerations, the dialogue of "an Holy War" against the Ottoman, which he never finished, but which he intended to dedicate to Andrewes, "in respect of our ancient and private acquaintance, and because amongst the men of our times I hold you in special reverence."

The question naturally presents itself, in regard to a friend of Bishop Andrewes, What was Bacon as regards religion? And the answer, it seems to me, can admit of no doubt. The obvious and superficial thing to say is that his religion was but an official one, a tribute to custom and opinion. But it was not so. Both in his philosophical thinking, and in the feelings of his mind in the various accidents and occasions of life, Bacon was a religious man, with a serious and genuine religion. His sense of the truth and greatness of religion was as real as his sense of the truth and greatness of nature; they were interlaced together, and could not be separated, though they were to be studied separately

and independently. The call, repeated through all his works from the earliest to the last, *Da Fidel quæ Fidel sunt*, was a warning against confusing the two, but was an earnest recognition of the claims of each. The solemn religious words in which his prefaces and general statements often wind up with thanksgiving and hope and prayer, are no mere words of course; they breathe the spirit of the deepest conviction. It is true that he takes the religion of Christendom as he finds it. The grounds of belief, the relation of faith to reason, the profounder inquiries into the basis of man's knowledge of the Eternal and Invisible, are out of the circle within which he works. What we now call the philosophy of religion is absent from his writings. In truth, his mind was not qualified to grapple with such questions. There is no sign in his writings that he ever tried his strength against them; that he ever cared to go below the surface into the hidden things of mind, and what mind deals with above and beyond sense — those metaphysical difficulties and depths, as we call them, which there is no escaping, and which are as hard to explore and as dangerous to mistake as the forces and combinations of external nature. But it does not follow, because he had not asked all the questions that others have asked, that he had not thought out his reasonable faith. His religion was not one of mere vague sentiment: it was the result of reflection and deliberate judgment. It was the discriminating and intelligent Church of England religion of Hooker and Andrewes, which had gone back to something deeper and nobler in Christianity than the popular Calvinism of the earlier Reformation; and though sternly hostile to the system of the Papacy, both on religious and political grounds, attempted to judge it with knowledge and justice. This deliberate character of his belief is shown in the remarkable Confession of Faith which he left behind him: a closely-reasoned and nobly-expressed survey of Christian theology— "a *summa theologiæ*, digested into seven pages of the finest English of the days when its tones were finest." "The entire scheme of Christian theology," as Mr. Spedding says, "is constantly in his thoughts; underlies everything; defines for him the limits of human speculation; and, as often as the course of inquiry touches at any point the boundary line, never fails to present itself. There is hardly any occasion or

any kind of argument into which it does not at one time or another incidentally introduce itself." Doubtless it was a religion which in him was compatible, as it has been in others, with grave faults of temperament and character. But it is impossible to doubt that it was honest, that it elevated his thoughts, that it was a refuge and stay in the times of trouble.

CHAPTER VIII.

BACON'S PHILOSOPHY.

Bacon was one of those men to whom posterity forgives a great deal for the greatness of what he has done and attempted for posterity. It is idle, unless all honest judgment is foregone, to disguise the many deplorable shortcomings of his life; it is unjust to have one measure for him, and another for those about him and opposed to him. But it is not too much to say that in temper, in honesty, in labour, in humility, in reverence, he was the most perfect example that the world had yet seen of the student of nature, the enthusiast for knowledge. That such a man was tempted and fell, and suffered the Nemesis of his fall, is an instance of the awful truth embodied in the tragedy of *Faust*. But his genuine devotion, so unwearied and so paramount, to a great idea and a great purpose for the good of all generations to come, must shield him from the insult of Pope's famous and shallow epigram. Whatever may have been his sins, and they were many, he cannot have been the "meanest of mankind," who lived and died, holding unaltered, amid temptations and falls, so noble a conception of the use and calling of his life: the duty and service of helping his brethren to know as they had never yet learned to know. That thought never left him; the obligations it imposed were never forgotten in the crush and heat of business; the toils, thankless at the time, which it heaped upon him in addition to the burdens of public life were never refused. Nothing diverted him, nothing made him despair. He was not discouraged because he was not understood. There never was any one in whose life the "*Souveraineté du but*" was more certain and more apparent; and that object was the second greatest that man can have. To teach men to know is only next to making them good.

The Baconian philosophy, the reforms of the *Novum Organum*, the method of experiment and induction, are commonplaces, and sometimes lead to a misconception of what Bacon did. Bacon is, and is not, the founder of modern

science. What Bacon believed could be done, what he hoped and divined, for the correction and development of human knowledge, was one thing; what his methods were, and how far they were successful, is another. It would hardly be untrue to say that though Bacon is the parent of modern science, his methods contributed nothing to its actual discoveries; neither by possibility could they have done so. The great and wonderful work which the world owes to him was in the idea, and not in the execution. The idea was that the systematic and wide examination of facts was the first thing to be done in science, and that till this had been done faithfully and impartially, with all the appliances and all the safeguards that experience and forethought could suggest, all generalisations, all anticipations from mere reasoning, must be adjourned and postponed; and further, that sought on these conditions, knowledge, certain and fruitful, beyond all that men then imagined, could be attained. His was the faith of the discoverer, the imagination of the poet, the voice of the prophet. But his was not the warrior's arm, the engineer's skill, the architect's creativeness. "I only sound the clarion," he says, "but I enter not into the battle;" and with a Greek quotation very rare with him, he compares himself to one of Homer's peaceful heralds, χαίρετε κήρυκες, Δίος ἄγγελοι ἠδὲ καὶ ἀνδρῶν. Even he knew not the full greatness of his own enterprise. He underrated the vastness and the subtlety of nature. He overrated his own appliances to bring it under his command. He had not that incommunicable genius and instinct of the investigator which in such men as Faraday close hand to hand with phenomena. His weapons and instruments wanted precision; they were powerful up to a certain point, but they had the clumsiness of an unpractised time. Cowley compared him to Moses on Pisgah surveying the promised land; it was but a distant survey, and Newton was the Joshua who began to take possession of it.

The idea of the great enterprise, in its essential outline, and with a full sense of its originality and importance, was early formed, and was even sketched on paper with Bacon's characteristic self-reliance when he was but twenty-five. Looking back, in a letter written in the last year of his life, on the ardour and constancy with which he had clung to his faith— "in that purpose my mind

never waxed old; in that long interval of time it never cooled" — he remarks that it was then "forty years since he put together a youthful essay on these matters, which with vast confidence I called by the high-sounding title, The Greatest Birth of Time." "The Greatest Birth of Time," whatever it was, has perished, though the name, altered to "Partus Temporis *Masculus*" has survived, attached to some fragments of uncertain date and arrangement. But in very truth the child was born, and, as Bacon says, for forty years grew and developed, with many changes yet the same. Bacon was most tenacious, not only of ideas, but even of the phrases, images, and turns of speech in which they had once flashed on him and taken shape in his mind. The features of his undertaking remained the same from first to last, only expanded and enlarged as time went on and experience widened; his conviction that the knowledge of nature, and with it the power to command and to employ nature, were within the capacity of mankind and might be restored to them; the certainty that of this knowledge men had as yet acquired but the most insignificant part, and that all existing claims to philosophical truth were as idle and precarious as the guesses and traditions of the vulgar; his belief that no greater object could be aimed at than to sweep away once and for ever all this sham knowledge and all that supported it, and to lay an entirely new and clear foundation to build on for the future; his assurance that, as it was easy to point out with fatal and luminous certainty the rottenness and hollowness of all existing knowledge and philosophy, so it was equally easy to devise and practically apply new and natural methods of investigation and construction, which should replace it by knowledge of infallible truth and boundless fruitfulness. His object — to gain the key to the interpretation of nature; his method — to gain it, not by the means common to all previous schools of philosophy, by untested reasonings and imposing and high-sounding generalisations, but by a series and scale of rigorously verified inductions, starting from the lowest facts of experience to discoveries which should prove and realise themselves by leading deductively to practical results — these, in one form or another, were the theme of his philosophical writings from the earliest sight of them that we gain.

He had disclosed what was in his mind in the letter to Lord Burghley, written when he was thirty-one (1590/91), in which he announced that he had "taken all knowledge for his province," to "purge it of 'frivolous disputations' and 'blind experiments,' and that whatever happened to him, he meant to be a 'true pioneer in the mine of truth.'" But the first public step in the opening of his great design was the publication in the autumn of 1605 of the *Advancement of Learning*, a careful and balanced report on the existing stock and deficiencies of human knowledge. His endeavours, as he says in the *Advancement* itself, are "but as an image in a cross-way, that may point out the way, but cannot go it." But from this image of his purpose, his thoughts greatly widened as time went on. The *Advancement*, in part at least, was probably a hurried work. It shadowed out, but only shadowed out, the lines of his proposed reform of philosophical thought; it showed his dissatisfaction with much that was held to be sound and complete, and showed the direction of his ideas and hopes. But it was many years before he took a further step. Active life intervened. In 1620, at the height of his prosperity, on the eve of his fall, he published the long meditated *Novum Organum*, the avowed challenge to the old philosophies, the engine and instrument of thought and discovery which was to put to shame and supersede all others, containing, in part at least, the principles of that new method of the use of experience which was to be the key to the interpretation and command of nature, and, together with the method, an elaborate but incomplete exemplification of its leading processes. Here were summed up, and stated with the most solemn earnestness, the conclusions to which long study and continual familiarity with the matters in question had led him. And with the *Novum Organum* was at length disclosed, though only in outline, the whole of the vast scheme in all its parts, object, method, materials, results, for the "Instauration" of human knowledge, the restoration of powers lost, disused, neglected, latent, but recoverable by honesty, patience, courage, and industry.

The *Instauratio*, as he planned the work, "is to be divided," says Mr. Ellis, "into six portions, of which the *first* is to contain a general survey of the present state of knowledge. In the *second*, men are to be taught how to use their

understanding aright in the investigation of nature. In the *third*, all the phenomena of the universe are to be stored up as in a treasure-house, as the materials on which the new method is to be employed. In the *fourth*, examples are to be given of its operation and of the results to which it leads. The *fifth* is to contain what Bacon had accomplished in natural philosophy *without* the aid of his own method, *ex eodem intellectûs usu quem alii in inquirendo et inveniendo adhibere consueverunt*. It is therefore less important than the rest, and Bacon declares that he will not bind himself to the conclusions which it contains. Moreover, its value will altogether cease when the *sixth* part can be completed, wherein will be set forth the new philosophy — the results of the application of the new method to all the phenomena of the universe. But to complete this, the last part of the *Instauratio*, Bacon does not hope; he speaks of it as a thing, *et supra vires et ultra spes nostras collocata*." — *Works*, i. 71.

The *Novum Organum*, itself imperfect, was the crown of all that he lived to do. It was followed (1622) by the publication, intended to be periodical, of materials for the new philosophy to work upon, particular sections and classes of observations on phenomena — the *History of the Winds*, the *History of Life and Death*. Others were partly prepared but not published by him. And finally, in 1623, he brought out in Latin a greatly enlarged recasting of the *Advancement*; the nine books of the "*De Augmentis*." But the great scheme was not completed; portions were left more or less finished. Much that he purposed was left undone, and could not have been yet done at that time.

But the works which he published represent imperfectly the labour spent on the undertaking. Besides these there remains a vast amount of unused or rejected work, which shows how it was thought out, rearranged, tried first in one fashion and then in another, recast, developed. Separate chapters, introductions, "experimental essays and discarded beginnings," treatises with picturesque and imaginative titles, succeeded one another in that busy work-shop; and these first drafts and tentative essays have in them some of the freshest and most felicitous forms of his thoughts. At one time his enterprise, connecting itself with his own life and mission, rose before his imagination and kindled his feelings, and

embodied itself in the lofty and stately "Proem" already quoted. His quick and brilliant imagination saw shadows and figures of his ideas in the ancient mythology, which he worked out with curious ingenuity and often much poetry in his *Wisdom of the Ancients*. Towards the end of his life he began to embody his thoughts and plans in a philosophical tale, which he did not finish — the *New Atlantis* — a charming example of his graceful fancy and of his power of easy and natural story-telling. Between the *Advancement* and the *Novum Organum* (1605-20) much underground work had been done. "He had finally (about 1607) settled the plan of the *Great Instauration*, and began to call it by that name." The plan, first in three or four divisions, had been finally digested into six. Vague outlines had become definite and clear. Distinct portions had been worked out. Various modes of treatment had been tried, abandoned, modified. Prefaces were written to give the sketch and purpose of chapters not yet composed. The *Novum Organum* had been written and rewritten twelve times over. Bacon kept his papers, and we can trace in the unused portion of those left behind him much of the progress of his work, and the shapes which much of it went through. The *Advancement* itself is the filling-out and perfecting of what is found in germ, meagre and rudimentary, in a *Discourse in Praise of Knowledge*, written in the days of Elizabeth, and in some Latin chapters of an early date, the *Cogitationes de Scientia Humana*, on the limits and use of knowledge, and on the relation of natural history to natural philosophy. These early essays, with much of the same characteristic illustration, and many of the favourite images and maxims and texts and phrases, which continue to appear in his writings to the end, contain the thoughts of a man long accustomed to meditate and to see his way on the new aspects of knowledge opening upon him. And before the *Advancement* he had already tried his hand on a work intended to be in two books, which Mr. Ellis describes as a "great work on the Interpretation of Nature," the "earliest type of the *Instauratio*," and which Bacon called by the enigmatical name of *Valerius Terminus*. In it, as in a second draft, which in its turn was superseded by the *Advancement*, the line of thought of the Latin *Cogitationes* reappears, expanded and more carefully ordered; it contains also the first sketch of his certain and

infallible method for what he calls the "freeing of the direction" in the search after Truth, and the first indications of the four classes of "Idols" which were to be so memorable a portion of Bacon's teaching. And between the *Advancement* and the *Novum Organum* at least one unpublished treatise of great interest intervened, the *Visa et Cogitata*, on which he was long employed, and which he brought to a finished shape, fit to be submitted to his friends and critics, Sir Thomas Bodley and Bishop Andrewes. It is spoken of as a book to be "imparted *sicut videbitur*," in the review which he made of his life and objects soon after he was made Solicitor in 1608. A number of fragments also bear witness to the fierce scorn and wrath which possessed him against the older and the received philosophies. He tried his hand at declamatory onslaughts on the leaders of human wisdom, from the early Greeks and Aristotle down to the latest "novellists;" and he certainly succeeded in being magnificently abusive. But he thought wisely that this was not the best way of doing what in the *Commentarius Solutus* he calls on himself to do— "taking a greater confidence and authority in discourses of this nature, *tanquam sui certus et de alto despiciens*;" and the rhetorical *Redargutio Philosophiarum* and writings of kindred nature were laid aside by his more serious judgment. But all these fragments witness to the immense and unwearied labour bestowed in the midst of a busy life on his undertaking; they suggest, too, the suspicion that there was much waste from interruption, and the doubt whether his work would not have been better if it could have been more steadily continuous. But if ever a man had a great object in life, and pursued it through good and evil report, through ardent hope and keen disappointment, to the end, with unwearied patience and unshaken faith, it was Bacon, when he sought the improvement of human knowledge "for the glory of God and the relief of man's estate." It is not the least part of the pathetic fortune of his life that his own success was so imperfect.

When a reader first comes from the vague, popular notions of Bacon's work to his definite proposals the effect is startling. Every one has heard that he contemplated a complete reform of the existing conceptions of human knowledge, and of the methods by which knowledge was to be sought; that

rejecting them as vitiated, by the loose and untested way in which they had been formed, he called men from verbal generalisations and unproved assumptions to come down face to face with the realities of experience; that he substituted for formal reasoning, from baseless premises and unmeaning principles, a methodical system of cautious and sifting inference from wide observation and experiment; and that he thus opened the path which modern science thenceforth followed, with its amazing and unexhausted discoveries, and its vast and beneficent practical results. We credit all this to Bacon, and assuredly not without reason. All this is what was embraced in his vision of a changed world of thought and achievement. All this is what was meant by that *Regnum Hominis*, which, with a play on sacred words which his age did not shrink from, and which he especially pleased himself with, marked the coming of that hitherto unimagined empire of man over the powers and forces which encompassed him. But the detail of all this is multifarious and complicated, and is not always what we expect; and when we come to see how his work is estimated by those who, by greatest familiarity with scientific ideas and the history of scientific inquiries, are best fitted to judge of it, many a surprise awaits us.

For we find that the greatest differences of opinion exist on the value of what he did. Not only very unfavourable judgments have been passed upon it, on general grounds — as an irreligious, or a shallow and one-sided, or a poor and "utilitarian" philosophy, and on a definite comparison of it with the actual methods and processes which as a matter of history have been the real means of scientific discovery — but also some of those who have most admired his genius, and with the deepest love and reverence have spared no pains to do it full justice, have yet come to the conclusion that as an instrument and real method of work Bacon's attempt was a failure. It is not only De Maistre and Lord Macaulay who dispute his philosophical eminence. It is not only the depreciating opinion of a contemporary like Harvey, who was actually doing what Bacon was writing about. It is not only that men who after the long history of modern science have won their place among its leaders, and are familiar by daily

experience with the ways in which it works — a chemist like Liebig, a physiologist like Claude Bernard — say that they can find nothing to help them in Bacon's methods. It is not only that a clear and exact critic like M. de Rémusat looks at his attempt, with its success and failure, as characteristic of English, massive, practical good sense rather than as marked by real philosophical depth and refinement, such as Continental thinkers point to and are proud of in Descartes and Leibnitz. It is not even that a competent master of the whole domain of knowledge, Whewell, filled with the deepest sense of all that the world owes to Bacon, takes for granted that "though Bacon's general maxims are sagacious and animating, his particular precepts failed in his hands, and are now practically useless;" and assuming that Bacon's method is not the right one, and not complete as far as the progress of science up to his time could direct it, proceeds to construct a *Novum Organum Renovatum*. But Bacon's writings have recently undergone the closest examination by two editors, whose care for his memory is as loyal and affectionate as their capacity is undoubted, and their willingness to take trouble boundless. And Mr. Ellis and Mr. Spedding, with all their interest in every detail of Bacon's work, and admiration of the way in which he performed it, make no secret of their conclusion that he failed in the very thing on which he was most bent — the discovery of practical and fruitful ways of scientific inquiry. "Bacon," says Mr. Spedding, "failed to devise a practicable method for the discovery of the Forms of Nature, because he misconceived the conditions of the case.... For the same reason he failed to make any single discovery which holds its place as one of the steps by which science has in any direction really advanced. The clew with which he entered the labyrinth did not reach far enough; before he had nearly attained his end he was obliged either to come back or to go on without it."

"His peculiar system of philosophy," says Mr. Spedding in another preface, "that is to say, the peculiar method of investigation, the "*organum*," the "*formula*," the "*clavis*," the "*ars ipsa interpretandi naturam*," the "*filum Labyrinthi*," or by whatever of its many names we choose to call that artificial process by which alone he believed man could attain a knowledge of the laws

and a command over the powers of nature — *of this philosophy we can make nothing*. If we have not tried it, it is because we feel confident that it would not answer. We regard it as a curious piece of machinery, very subtle, elaborate, and ingenious, but not worth constructing, because all the work it could do may be done more easily another way." — *Works*, iii. 171.

What his method really was is itself a matter of question. Mr. Ellis speaks of it as a matter "but imperfectly apprehended." He differs from his fellow-labourer Mr. Spedding, in what he supposes to be its central and characteristic innovation. Mr. Ellis finds it in an improvement and perfection of logical machinery. Mr. Spedding finds it in the formation of a great "natural and experimental history," a vast collection of facts in every department of nature, which was to be a more important part of his philosophy than the *Novum Organum* itself. Both of them think that as he went on, the difficulties of the work grew upon him, and caused alterations in his plans, and we are reminded that "there is no didactic exposition of his method in the whole of his writings," and that "this has not been sufficiently remarked by those who have spoken of his philosophy."

In the first place, the kind of intellectual instrument which he proposed to construct was a mistake. His great object was to place the human mind "on a level with things and nature" (*ut faciamus intellectum humanum rebus et naturæ parem*), and this could only be done by a revolution in methods. The ancients had all that genius could do for man; but it was a matter, he said, not of the strength and fleetness of the running, but of the rightness of the way. It was a new method, absolutely different from anything known, which he proposed to the world, and which should lead men to knowledge, with the certainty and with the impartial facility of a high-road. The Induction which he imagined to himself as the contrast to all that had yet been tried was to have two qualities. It was to end, by no very prolonged or difficult processes, in absolute certainty. And next, it was to leave very little to the differences of intellectual power: it was to level minds and capacities. It was to give all men the same sort of power which a pair of compasses gives the hand in drawing a circle. "*Absolute certainty, and a mechanical mode of procedure*" says Mr. Ellis, "*such that all men should be*

capable of employing it, are the two great features of the Baconian system." This he thought possible, and this he set himself to expound— "a method universally applicable, and in all cases infallible." In this he saw the novelty and the vast importance of his discovery. "By this method all the knowledge which the human mind was capable of receiving might be attained, and attained without unnecessary labour." It was a method of "a demonstrative character, with the power of reducing all minds to nearly the same level." The conception, indeed, of a "great Art of knowledge," of an "Instauration" of the sciences, of a "Clavis" which should unlock the difficulties which had hindered discovery, was not a new one. This attempt at a method which should be certain, which should level capacities, which should do its work in a short time, had a special attraction for the imagination of the wild spirits of the South, from Raimond Lulli in the thirteenth century to the audacious Calabrians of the sixteenth. With Bacon it was something much more serious and reasonable and business-like. But such a claim has never yet been verified; there is no reason to think that it ever can be; and to have made it shows a fundamental defect in Bacon's conception of the possibilities of the human mind and the field it has to work in.

In the next place, though the prominence which he gave to the doctrine of Induction was one of those novelties which are so obvious after the event, though so strange before it, and was undoubtedly the element in his system which gave it life and power and influence on the course of human thought and discovery, his account of Induction was far from complete and satisfactory. Without troubling himself about the theory of Induction, as De Rémusat has pointed out, he contented himself with applying to its use the precepts of common-sense and a sagacious perception of the circumstances in which it was to be employed. But even these precepts, notable as they were, wanted distinctness, and the qualities needed for working rules. The change is great when in fifty years we pass from the poetical science of Bacon to the mathematical and precise science of Newton. His own time may well have been struck by the originality and comprehensiveness of such a discriminating arrangement of proofs as the "Prerogative Instances" of the *Novum Organum*, so

natural and real, yet never before thus compared and systematized. But there is a great interval between his method of experimenting, his "*Hunt of Pan*" — the three tables of Instances, "*Presence*," "*Absence*" and "*Degrees, or Comparisons*," leading to a process of sifting and exclusion, and to the *First Vintage*, or beginnings of theory — and say, for instance, Mill's four methods of experimental inquiry: the method of *agreement*, of *differences*, of *residues*, and of *concomitant variations*. The course which he marked out so laboriously and so ingeniously for Induction to follow was one which was found to be impracticable, and as barren of results as those deductive philosophies on which he lavished his scorn. He has left precepts and examples of what he meant by his cross-examining and sifting processes. As admonitions to cross-examine and to sift facts and phenomena they are valuable. Many of the observations and classifications are subtle and instructive. But in his hands nothing comes of them. They lead at the utmost to mere negative conclusions; they show what a thing is not. But his attempt to elicit anything positive out of them breaks down, or ends at best in divinations and guesses, sometimes — as in connecting Heat and Motion — very near to later and more carefully-grounded theories, but always unverified. He had a radically false and mechanical conception, though in words he earnestly disclaims it, of the way to deal with the facts of nature. He looked on them as things which told their own story, and suggested the questions which ought to be put to them; and with this idea half his time was spent in collecting huge masses of indigested facts of the most various authenticity and value, and he thought he was collecting materials which his method had only to touch in order to bring forth from them light and truth and power. He thought that, not in certain sciences, but in all, one set of men could do the observing and collecting, and another be set on the work of Induction and the discovery of "axioms." Doubtless in the arrangement and sorting of them his versatile and ingenious mind gave itself full play; he divides and distinguishes them into their companies and groups, different kinds of Motion, "Prerogative" instances, with their long tale of imaginative titles. But we look in vain for any use that he was able to make of them, or even to suggest. Bacon never adequately realised that

no promiscuous assemblage of even the most certain facts could ever lead to knowledge, could ever suggest their own interpretation, without the action on them of the living mind, without the initiative of an idea. In truth he was so afraid of assumptions and "anticipations" and prejudices — his great bugbear was so much the "*intellectus sibi permissus*" the mind given liberty to guess and imagine and theorise, instead of, as it ought, absolutely and servilely submitting itself to the control of facts — that he missed the true place of the rational and formative element in his account of Induction. He does tell us, indeed, that "truth emerges sooner from error than from confusion." He indulges the mind, in the course of its investigation of "Instances," with a first "vintage" of provisional generalisations. But of the way in which the living mind of the discoverer works, with its ideas and insight, and thoughts that come no one knows whence, working hand in hand with what comes before the eye or is tested by the instrument, he gives us no picture. Compare his elaborate investigation of the "Form of Heat" in the *Novum Organum*, with such a record of real inquiry as Wells's *Treatise on Dew*, or Herschel's analysis of it in his *Introduction to Natural Philosophy*. And of the difference of genius between a Faraday or a Newton, and the crowd of average men who have used and finished off their work, he takes no account. Indeed, he thinks that for the future such difference is to disappear.

"That his method is impracticable," says Mr. Ellis, "cannot, I think, be denied, if we reflect not only that it never has produced any result, but also that the process by which scientific truths have been established cannot be so presented as even to appear to be in accordance with it. In all cases this process involves an element to which nothing corresponds in the Tables of 'Comparence' and 'Exclusion,' namely, the application to the facts of observation of a principle of arrangement, an idea, existing in the mind of the discoverer antecedently to the act of induction. It may be said that this idea is precisely one of the *naturæ* into which the facts of observation ought in Bacon's system to be analysed. And this is in one sense true; but it must be added that this analysis, if it be thought right so to call it, is of the essence of the discovery

which results from it. In most cases the act of induction follows as a matter of course as soon as the appropriate idea has been introduced." — Ellis, *General Preface*, i. 38.

Lastly, not only was Bacon's conception of philosophy so narrow as to exclude one of its greatest domains; for, says Mr. Ellis, "it cannot be denied that to Bacon all sound philosophy seemed to be included in what we now call the natural sciences," and in all its parts was claimed as the subject of his inductive method; but Bacon's scientific knowledge and scientific conceptions were often very imperfect — more imperfect than they ought to have been for his time. Of one large part of science, which was just then beginning to be cultivated with high promise of success — the knowledge of the heavens — he speaks with a coldness and suspicion which contrasts remarkably with his eagerness about things belonging to the sphere of the earth and within reach of the senses. He holds, of course, the unity of the world; the laws of the whole visible universe are one order; but the heavens, wonderful as they are to him, are — compared with other things — out of his track of inquiry. He had his astronomical theories; he expounded them in his "*Descriptio Globi Intellectualis*" and his *Thema Coeli* He was not altogether ignorant of what was going on in days when Copernicus, Kepler, and Galileo were at work. But he did not know how to deal with it, and there were men in England, before and then, who understood much better than he the problems and the methods of astronomy. He had one conspicuous and strange defect for a man who undertook what he did. He was not a mathematician: he did not see the indispensable necessity of mathematics in the great *Instauration* which he projected; he did not much believe in what they could do. He cared so little about them that he takes no notice of Napier's invention of Logarithms. He was not able to trace how the direct information of the senses might be rightly subordinated to the rational, but not self-evident results of geometry and arithmetic. He was impatient of the subtleties of astronomical calculations; they only attempted to satisfy problems about the motion of bodies in the sky, and told us nothing of physical fact; they gave us, as Prometheus gave to Jove, the outside skin of the offering, which was stuffed

inside with straw and rubbish. He entirely failed to see that before dealing with physical astronomy, it must be dealt with mathematically. “It is well to remark,” as Mr. Ellis says, “that none of Newton’s astronomical discoveries could have been made if astronomers had not continued to render themselves liable to Bacon’s censure.” Bacon little thought that in navigation the compass itself would become a subordinate instrument compared with the helps given by mathematical astronomy. In this, and in other ways, Bacon rose above his time in his conceptions of what *might be*, but not of what *was*; the list is a long one, as given by Mr. Spedding (iii. 511), of the instances which show that he was ill-informed about the advances of knowledge in his own time. And his mind was often not clear when he came to deal with complex phenomena. Thus, though he constructed a table of specific gravities— “the only collection,” says Mr. Ellis, “of quantitative experiments that we find in his works,” and “wonderfully accurate considering the manner in which they were obtained;” yet he failed to understand the real nature of the famous experiment of Archimedes. And so with the larger features of his teaching it is impossible not to feel how imperfectly he had emancipated himself from the power of words and of common prepossessions; how for one reason or another he had failed to call himself to account in the terms he employed, and the assumptions on which he argued. The caution does not seem to have occurred to him that the statement of a fact may, in nine cases out of ten, involve a theory. His whole doctrine of “Forms” and “Simple natures,” which is so prominent in his method of investigation, is an example of loose and slovenly use of unexamined and untested ideas. He allowed himself to think that it would be possible to arrive at an alphabet of nature, which, once attained, would suffice to spell out and constitute all its infinite combinations. He accepted, without thinking it worth a doubt, the doctrine of appetites and passions and inclinations and dislikes and horrors in inorganic nature. His whole physiology of life and death depends on a doctrine of animal spirits, of which he traces the operations and qualities as if they were as certain as the nerves or the blood, and of which he gives this account— “that in every tangible body there is a spirit covered and enveloped in the grosser

body;" "not a virtue, not an energy, not an actuality, nor any such idle matter, but a body thin and invisible, and yet having place and dimension, and real." ... "a middle nature between flame, which is momentary, and air which is permanent." Yet these are the very things for which he holds up Aristotle and the Scholastics and the Italian speculators to reprobation and scorn. The clearness of his thinking was often overlaid by the immense profusion of decorative material which his meditation brought along with it. The defect was greater than that which even his ablest defenders admit. It was more than that in that "greatest and radical difference, which he himself observes" between minds, the difference between minds which were apt to note *distinctions*, and those which were apt to note *likenesses*, he was, without knowing it, defective in the first. It was that in many instances he exemplified in his own work the very faults which he charged on the older philosophies: haste, carelessness, precipitancy, using words without thinking them out, assuming to know when he ought to have perceived his real ignorance.

What, then, with all these mistakes and failures, not always creditable or pardonable, has given Bacon his preeminent place in the history of science?

1. The answer is that with all his mistakes and failures, the principles on which his mode of attaining a knowledge of nature was based were the only true ones; and they had never before been propounded so systematically, so fully, and so earnestly. His was not the first mind on whom these principles had broken. Men were, and had been for some time, pursuing their inquiries into various departments of nature precisely on the general plan of careful and honest observation of real things which he enjoined. They had seen, as he saw, the futility of all attempts at natural philosophy by mere thinking and arguing, without coming into contact with the contradictions or corrections or verifications of experience. In Italy, in Germany, in England there were laborious and successful workers, who had long felt that to be in touch with nature was the only way to know. But no one had yet come before the world to proclaim this on the house-tops, as the key of the only certain path to the secrets of nature, the watchword of a revolution in the methods of interpreting her; and

this Bacon did with an imposing authority and power which enforced attention. He spoke the thoughts of patient toilers like Harvey with a largeness and richness which they could not command, and which they perhaps smiled at. He disentangled and spoke the vague thoughts of his age, which other men had not the courage and clearness of mind to formulate. What Bacon *did*, indeed, and what he *meant*, are separate matters. He *meant* an infallible method by which man should be fully equipped for a struggle with nature; he meant an irresistible and immediate conquest, within a definite and not distant time. It was too much. He himself saw no more of what he *meant* than Columbus did of America. But what he *did* was to persuade men for the future that the intelligent, patient, persevering cross-examination of things, and the thoughts about them, was the only, and was the successful road to know. No one had yet done this, and he did it. His writings were a public recognition of real science, in its humblest tasks about the commonplace facts before our feet, as well as in its loftiest achievements. "The man who is growing great and happy by electrifying a bottle," says Dr. Johnson, "wonders to see the world engaged in the prattle about peace and war," and the world was ready to smile at the simplicity or the impertinence of his enthusiasm. Bacon impressed upon the world for good, with every resource of subtle observation and forcible statement, that "the man who is growing great by electrifying a bottle" is as important a person in the world's affairs as the arbiter of peace and war.

2. Yet this is not all. An inferior man might have made himself the mouthpiece of the hopes and aspirations of his generation after a larger science. But to Bacon these aspirations embodied themselves in the form of a great and absorbing idea; an idea which took possession of the whole man, kindling in him a faith which nothing could quench, and a passion which nothing could dull; an idea which, for forty years, was his daily companion, his daily delight, his daily business; an idea which he was never tired of placing in ever fresh and more attractive lights, from which no trouble could wean him, about which no disaster could make him despair; an idea round which the instincts and intuitions and obstinate convictions of genius gathered, which kindled his rich imagination and

was invested by it with a splendour and magnificence like the dreams of fable. It is this idea which finds its fitting expression in the grand and stately aphorisms of the *Novum Organum*, in the varied fields of interest in the *De Augmentis*, in the romance of the *New Atlantis*. It is this idea, this certainty of a new unexplored Kingdom of Knowledge within the reach and grasp of man, if he will be humble enough and patient enough and truthful enough to occupy it — this announcement not only of a new system of thought, but of a change in the condition of the world — a prize and possession such as man had not yet imagined; this belief in the fortunes of the human race and its issue, "such an issue, it may be, as in the present condition of things and men's minds cannot easily be conceived or imagined," yet more than verified in the wonders which our eyes have seen — it is this which gives its prerogative to Bacon's work. That he bungled about the processes of Induction, that he talked about an unintelligible doctrine of *Forms*, did not affect the weight and solemnity of his call to learn, so full of wisdom and good-sense, so sober and so solid, yet so audaciously confident. There had been nothing like it in its ardour of hope, in the glory which it threw around the investigation of nature. It was the presence and the power of a great idea — long become a commonplace to us, but strange and perplexing at first to his own generation, which probably shared Coke's opinion that it qualified its champion for a place in the company of the "Ship of Fools," which expressed its opinion of the man who wrote the *Novum Organum*, in the sentiment that "a fool *could* not have written it, and a wise man *would* not" — it is this which has placed Bacon among the great discoverers of the human race.

It is this imaginative yet serious assertion of the vast range and possibilities of human knowledge which, as M. de Rémusat remarks — the keenest and fairest of Bacon's judges — gives Bacon his claim to the undefinable but very real character of greatness. Two men stand out, "the masters of those who know," without equals up to their time, among men — the Greek Aristotle and the Englishman Bacon. They agree in the universality and comprehensiveness of their conception of human knowledge; and they were absolutely alone in their serious practical ambition to work out this conception. In the separate

departments of thought, of investigation, of art, each is left far behind by numbers of men, who in these separate departments have gone far deeper than they, have soared higher, have been more successful in what they attempted. But Aristotle first, and for his time more successfully, and Bacon after him, ventured on the daring enterprise of "taking all knowledge for their province;" and in this they stood alone. This present scene of man's existence, this that we call nature, the stage on which mortal life begins and goes on and ends, the faculties with which man is equipped to act, to enjoy, to create, to hold his way amid or against the circumstances and forces round him — this is what each wants to know, as thoroughly and really as can be. It is not to reduce things to a theory or a system that they look around them on the place where they find themselves with life and thought and power; that were easily done, and has been done over and over again, only to prove its futility. It is to know, as to the whole and its parts, as men understand *knowing* in some one subject of successful handling, whether art or science or practical craft. This idea, this effort, distinguishes these two men. The Greeks — predecessors, contemporaries, successors of Aristotle — were speculators, full of clever and ingenious guesses, in which the amount of clear and certain fact was in lamentable disproportion to the schemes blown up from it; or they devoted themselves more profitably to some one or two subjects of inquiry, moral or purely intellectual, with absolute indifference to what might be asked, or what might be known, of the real conditions under which they were passing their existence. Some of the Romans, Cicero and Pliny, had encyclopædic minds; but the Roman mind was the slave of precedent, and was more than satisfied with partially understanding and neatly arranging what the Greeks had left. The Arabians looked more widely about them; but the Arabians were essentially sceptics, and resigned subjects to the inevitable and the inexplicable; there was an irony, open or covert, in their philosophy, their terminology, their transcendental mysticism, which showed how little they believed that they really knew. The vast and mighty intellects of the schoolmen never came into a real grapple with the immensity of the facts of the natural or even of the moral world; within the world of abstract thought, the world of

language, with its infinite growths and consequences, they have never had their match for keenness, for patience, for courage, for inexhaustible toil; but they were as much disconnected from the natural world, which was their stage of life, as if they had been disembodied spirits. The Renaissance brought with it not only the desire to know, but to know comprehensively and in all possible directions; it brought with it temptations to the awakened Italian genius, renewed, enlarged, refined, if not strengthened by its passage through the Middle Ages, to make thought deal with the real, and to understand the scene in which men were doing such strange and wonderful things; but Giordano Bruno, Telesio, Campanella, and their fellows, were not men capable of more than short flights, though they might be daring and eager ones. It required more thoroughness, more humble-minded industry, to match the magnitude of the task. And there have been men of universal minds and comprehensive knowledge since Bacon, Leibnitz, Goethe, Humboldt, men whose thoughts were at home everywhere, where there was something to be known. But even for them the world of knowledge has grown too large. We shall never again see an Aristotle or a Bacon, because the conditions of knowledge have altered. Bacon, like Aristotle, belonged to an age of adventure, which went to sea little knowing whither it went, and ill furnished with knowledge and instruments. He entered with a vast and vague scheme of discovery on these unknown seas and new worlds which to us are familiar, and daily traversed in every direction. This new world of knowledge has turned out in many ways very different from what Aristotle or Bacon supposed, and has been conquered by implements and weapons very different in precision and power from what they purposed to rely on. But the combination of patient and careful industry, with the courage and divination of genius, in doing what none had done before, makes it equally stupid and idle to impeach their greatness.

3. Bacon has been charged with bringing philosophy down from the heights, not as of old to make men know themselves, and to be the teacher of the highest form of truth, but to be the purveyor of material utility. It contemplates only, it is said, the "*commoda vitæ*;" about the deeper and more elevating problems of

thought it does not trouble itself. It concerns itself only about external and sensible nature, about what is "of the earth, earthy." But when it comes to the questions which have attracted the keenest and hardiest thinkers, the question, what it is that thinks and wills — what is the origin and guarantee of the faculties by which men know anything at all and form rational and true conceptions about nature and themselves, whence it is that reason draws its powers and materials and rules — what is the meaning of words which all use but few can explain — Time and Space, and Being and Cause, and consciousness and choice, and the moral law — Bacon is content with a loose and superficial treatment of them. Bacon certainly was not a metaphysician, nor an exact and lucid reasoner. With wonderful flashes of sure intuition or happy anticipation, his mind was deficient in the powers which deal with the deeper problems of thought, just as it was deficient in the mathematical faculty. The subtlety, the intuition, the penetration, the severe precision, even the force of imagination, which make a man a great thinker on any abstract subject were not his; the interest of questions which had interested metaphysicians had no interest for him: he distrusted and undervalued them. When he touches the "ultimities" of knowledge he is as obscure and hard to be understood as any of those restless Southern Italians of his own age, who shared with him the ambition of reconstructing science. Certainly the science which most interested Bacon, the science which he found, as he thought, in so desperate a condition, and to which he gave so great an impulse, was physical science. But physical science may be looked at and pursued in different ways, in different tempers, with different objects. It may be followed in the spirit of Newton, of Boyle, of Herschel, of Faraday; or with a confined and low horizon it may be dwarfed and shrivelled into a mean utilitarianism. But Bacon's horizon was not a narrow one. He believed in God and immortality and the Christian creed and hope. To him the restoration of the Reign of Man was a noble enterprise, because man was so great and belonged to so great an order of things, because the things which he was bid to search into with honesty and truthfulness were the works and laws of God, because it was so shameful and so miserable that from an ignorance which industry and good-sense could remedy, the tribes

of mankind passed their days in self-imposed darkness and helplessness. It was God's appointment that men should go through this earthly stage of their being. Each stage of man's mysterious existence had to be dealt with, not according to his own fancies, but according to the conditions imposed on it; and it was one of man's first duties to arrange for his stay on earth according to the real laws which he could find out if he only sought for them. Doubtless it was one of Bacon's highest hopes that from the growth of true knowledge would follow in surprising ways the relief of man's estate; this, as an end, runs through all his yearning after a fuller and surer method of interpreting nature. The desire to be a great benefactor, the spirit of sympathy and pity for mankind, reign through this portion of his work — pity for confidence so greatly abused by the teachers of man, pity for ignorance which might be dispelled, pity for pain and misery which might be relieved. In the quaint but beautiful picture of courtesy, kindness, and wisdom, which he imagines in the *New Atlantis*, the representative of true philosophy, the "Father of Solomon's House," is introduced as one who "had an aspect as if he pitied men." But unless it is utilitarianism to be keenly alive to the needs and pains of life, and to be eager and busy to lighten and assuage them, Bacon's philosophy was not utilitarian. It may deserve many reproaches, but not this one. Such a passage as the following — in which are combined the highest motives and graces and passions of the soul, love of truth, humility of mind, purity of purpose, reverence for God, sympathy for man, compassion for the sorrows of the world and longing to heal them, depth of conviction and faith — fairly represents the spirit which runs through his works. After urging the mistaken use of imagination and authority in science, he goes on — "There is not and never will be an end or limit to this; one catches at one thing, another at another; each has his favourite fancy; pure and open light there is none; every one philosophises out of the cells of his own imagination, as out of Plato's cave; the higher wits with more acuteness and felicity, the duller, less happily, but with equal pertinacity. And now of late, by the regulation of some learned and (as things now are) excellent men (the former license having, I suppose, become wearisome), the sciences are confined to certain and prescribed

authors, and thus restrained are imposed upon the old and instilled into the young; so that now (to use the sarcasm of Cicero concerning Cæsar's year) the constellation of Lyra rises by edict, and authority is taken for truth, not truth for authority. Which kind of institution and discipline is excellent for present use, but precludes all prospect of improvement. For we copy the sin of our first parents while we suffer for it. They wished to be like God, but their posterity wish to be even greater. For we create worlds, we direct and domineer over nature, we will have it that all things *are* as in our folly we think they should be, not as seems fittest to the Divine wisdom, or as they are found to be in fact; and I know not whether we more distort the facts of nature or of our own wits; but we clearly impress the stamp of our own image on the creatures and works of God, instead of carefully examining and recognising in them the stamp of the Creator himself. Wherefore our dominion over creatures is a second time forfeited, not undeservedly; and whereas after the fall of man some power over the resistance of creatures was still left to him — the power of subduing and managing them by true and solid arts — yet this too through our insolence, and because we desire to be like God and to follow the dictates of our own reason, we in great part lose. If, therefore, there be any humility towards the Creator, any reverence for or disposition to magnify His works, any charity for man and anxiety to relieve his sorrows and necessities, any love of truth in nature, any hatred of darkness, any desire for the purification of the understanding, we must entreat men again and again to discard, or at least set apart for a while, these volatile and preposterous philosophies which have preferred theses to hypotheses, led experience captive, and triumphed over the works of God; and to approach with humility and veneration to unroll the volume of Creation, to linger and meditate therein, and with minds washed clean from opinions to study it in purity and integrity. For this is that sound and language which "went forth into all lands," and did not incur the confusion of Babel; this should men study to be perfect in, and becoming again as little children condescend to take the alphabet of it into their hands, and spare no pains to search and unravel the interpretation thereof,

but pursue it strenuously and persevere even unto death." — Preface to *Historia Naturalis*: translated, *Works*, v. 132-3.

CHAPTER IX.

BACON AS A WRITER.

Bacon's name belongs to letters as well as to philosophy. In his own day, whatever his contemporaries thought of his *Instauration of Knowledge*, he was in the first rank as a speaker and a writer. Sir Walter Raleigh, contrasting him with Salisbury, who could speak but not write, and Northampton, who could write but not speak, thought Bacon eminent both as a speaker and a writer. Ben Jonson, passing in review the more famous names of his own and the preceding age, from Sir Thomas More to Sir Philip Sidney, Hooker, Essex, and Raleigh, places Bacon without a rival at the head of the company as the man who had "fulfilled all numbers," and "stood as the mark and ἀκμὴ of our language." And he also records Bacon's power as a speaker. "No man," he says, "ever spoke more neatly, more pressly, or suffered less emptiness, less idleness, in what he uttered."..."His hearers could not cough or look aside from him without loss. He commanded when he spoke, and had his judges angry and pleased at his devotion ... the fear of every man that heard him was that he should make an end." He notices one feature for which we are less prepared, though we know that the edge of Bacon's sarcastic tongue was felt and resented in James's Court. "His speech," says Ben Jonson, "was nobly censorious when he could *spare and pass by a jest*." The unpopularity which certainly seems to have gathered round his name may have had something to do with this reputation.

Yet as an English writer Bacon did not expect to be remembered, and he hardly cared to be. He wrote much in Latin, and his first care was to have his books put into a Latin dress. "For these modern languages," he wrote to Toby Matthews towards the close of his life, "will at one time or another play the bank-rowte with books, and since I have lost much time with this age, I would be glad if God would give me leave to recover it with posterity." He wanted to be read by the learned out of England, who were supposed to appreciate his

philosophical ideas better than his own countrymen, and the only way to this was to have his books translated into the "general language." He sends Prince Charles the *Advancement* in its new Latin dress. "It is a book," he says, "that will live, and be a citizen of the world, as English books are not." And he fitted it for continental reading by carefully weeding it of all passages that might give offence to the censors at Rome or Paris. "I have been," he writes to the King, "mine own *Index Expurgatorius*, that it may be read in all places. For since my end of putting it in Latin was to have it read everywhere, it had been an absurd contradiction to free it in the language and to pen it up in the matter." Even the *Essays* and the *History of Henry VII.* he had put into Latin "by some good pens that do not forsake me." Among these translators are said to have been George Herbert and Hobbes, and on more doubtful authority, Ben Jonson and Selden. The *Essays* were also translated into Latin and Italian with Bacon's sanction.

Bacon's contemptuous and hopeless estimate of "these modern languages," forty years after Spenser had proclaimed and justified his faith in his own language, is only one of the proofs of the short-sightedness of the wisest and the limitations of the largest-minded. Perhaps we ought not to wonder at his silence about Shakespeare. It was the fashion, except among a set of clever but not always very reputable people, to think the stage, as it was, below the notice of scholars and statesmen; and Shakespeare took no trouble to save his works from neglect. Yet it is a curious defect in Bacon that he should not have been more alive to the powers and future of his own language. He early and all along was profoundly impressed with the contrast, which the scholarship of the age so abundantly presented, of words to things. He dwells in the *Advancement* on that "first distemper of learning, when men study words and not matter." He illustrates it at large from the reaction of the new learning and of the popular teaching of the Reformation against the utilitarian and unclassical terminology of the schoolmen; a reaction which soon grew to excess, and made men "hunt more after choiceness of the phrase, and the round and clean composition of the sentence, and the sweet falling of the clauses," than after worth of subject, soundness of argument, "life of invention or depth of judgment." "I have

represented this," he says, "in an example of late times, but it hath been and will be *secundum majus et minus* in all times;" and he likens this "vanity" to "Pygmalion's frenzy"— "for to fall in love with words which are but the images of matter, is all one as to fall in love with a picture." He was dissatisfied with the first attempt at translation into Latin of the *Advancement* by Dr. Playfer of Cambridge, because he "desired not so much neat and polite, as clear, masculine, and apt expression." Yet, with this hatred of circumlocution and prettiness, of the cloudy amplifications, and pompous flourishings, and "the flowing and watery vein," which the scholars of his time affected, it is strange that he should not have seen that the new ideas and widening thoughts of which he was the herald would want a much more elastic and more freely-working instrument than Latin could ever become. It is wonderful indeed what can be done with Latin. It was long after his day to be the language of the exact sciences. In his *History of the Winds*, which is full of his irrepressible fancy and picturesqueness, Bacon describes in clear and intelligible Latin the details of the rigging of a modern man-of-war, and the mode of sailing her. But such tasks impose a yoke, sometimes a rough one, on a language which has "taken its ply" in very different conditions, and of which the genius is that of indirect and circuitous expression, "full of majesty and circumstance." But it never, even in those days of scholarship, could lend itself to the frankness, the straightforwardness, the fulness and shades of suggestion and association, with which, in handling ideas of subtlety and difficulty, a writer would wish to speak to his reader, and which he could find only in his mother tongue. It might have been thought that with Bacon's contempt of form and ceremony in these matters, his consciousness of the powers of English in his hands might have led him to anticipate that a flexible and rich and strong language might create a literature, and that a literature, if worth studying, would be studied in its own language. But so great a change was beyond even his daring thoughts. To him, as to his age, the only safe language was the Latin. For familiar use English was well enough. But it could not be trusted; "it would play the bankrupt with books." And yet Galileo was writing in Italian as well as in Latin; only within twenty-five years later,

Descartes was writing *De la Méthode*, and Pascal was writing in the same French in which he wrote the *Provincial Letters*, his *Nouvelles Expériences touchant le Vide*, and the controversial pamphlets which followed it; showing how in that interval of five-and-twenty years an instrument had been fashioned out of a modern language such as for lucid expression and clear reasoning, Bacon had not yet dreamed of. From Bacon to Pascal is the change from the old scientific way of writing to the modern; from a modern language, as learned and used in the 16th century, to one learned in the 17th.

But the language of the age of Elizabeth was a rich and noble one, and it reached a high point in the hands of Bacon. In his hands it lent itself to many uses, and assumed many forms, and he valued it, not because he thought highly of its qualities as a language, but because it enabled him with least trouble "to speak as he would," in throwing off the abundant thoughts that rose within his mind, and in going through the variety of business which could not be done in Latin. But in all his writing it is the matter, the real thing that he wanted to say, which was uppermost. He cared how it was said, not for the sake of form or ornament, but because the force and clearness of what was said depended so much on how it was said. Of course, what he wanted to say varied indefinitely with the various occasions of his life. His business may merely be to write "a device" or panegyric for a pageant in the Queen's honour, or for the revels of Gray's Inn. But even these trifles are the result of real thought, and are full of ideas — ideas about the hopes of knowledge or about the policy of the State; and though, of course, they have plenty of the flourishes and quaint absurdities indispensable on such occasions, yet the "rhetorical affectation" is in the thing itself, and not in the way it is handled; he had an opportunity of saying some of the things which were to him of deep and perpetual interest, and he used it to say them, as forcibly, as strikingly, as attractively as he could. His manner of writing depends, not on a style, or a studied or acquired habit, but on the nature of the task which he has in hand. Everywhere his matter is close to his words, and governs, animates, informs his words. No one in England before had so much as he had the power to say what he wanted to say, and exactly as he wanted to say

it. No one was so little at the mercy of conventional language or customary rhetoric, except when he persuaded himself that he had to submit to those necessities of flattery, which cost him at last so dear.

The book by which English readers, from his own time to ours, have known him best, better than by the originality and the eloquence of the *Advancement*, or than by the political weight and historical imagination of the *History of Henry VII.*, is the first book which he published, the volume of *Essays*. It is an instance of his self-willed but most skilful use of the freedom and ease which the "modern language," which he despised, gave him. It is obvious that he might have expanded these "Counsels, moral and political," to the size which such essays used to swell to after his time. Many people would have thanked him for doing so; and some have thought it a good book on which to hang their own reflections and illustrations. But he saw how much could be done by leaving the beaten track of set treatise and discourse, and setting down unceremoniously the observations which he had made, and the real rules which he had felt to be true, on various practical matters which come home to men's "business and bosoms." He was very fond of these moral and political generalisations, both of his own collecting and as found in writers who, he thought, had the right to make them, like the Latins of the Empire and the Italians and Spaniards of the Renaissance. But a mere string of maxims and quotations would have been a poor thing and not new; and he cast what he had to say into connected wholes. But nothing can be more loose than the structure of the essays. There is no art, no style, almost, except in a few — the political ones — no order: thoughts are put down and left unsupported, unproved, undeveloped. In the first form of the ten, which composed the first edition of 1597, they are more like notes of analysis or tables of contents; they are austere even to meagreness. But the general character continues in the enlarged and expanded ones of Bacon's later years. They are like chapters in Aristotle's Ethics and Rhetoric on virtues and characters; only Bacon's takes Aristotle's broad marking lines as drawn, and proceeds with the subtler and more refined observations of a much longer and wider experience. But these short papers say what they have to say without preface, and in literary

undress, without a superfluous word, without the joints and bands of structure; they say it in brief, rapid sentences, which come down, sentence after sentence, like the strokes of a great hammer. No wonder that in their disdainful brevity they seem rugged and abrupt, "and do not seem to end, but fall." But with their truth and piercingness and delicacy of observation, their roughness gives a kind of flavour which no elaboration could give. It is none the less that their wisdom is of a somewhat cynical kind, fully alive to the slipperiness and self-deceits and faithlessness which are in the world and rather inclined to be amused at them. In some we can see distinct records of the writer's own experience: one contains the substance of a charge delivered to Judge Hutton on his appointment; another of them is a sketch drawn from life of a character which had crossed Bacon's path, and in the essay on *Seeming Wise* we can trace from the impatient notes put down in his *Commentarius Solutus*, the picture of the man who stood in his way, the Attorney-General Hobart. Some of them are memorable oracular utterances not inadequate to the subject, on *Truth* or *Death* or *Unity*. Others reveal an utter incapacity to come near a subject, except as a strange external phenomena, like the essay on *Love*. There is a distinct tendency in them to the Italian school of political and moral wisdom, the wisdom of distrust and of reliance on indirect and roundabout ways. There is a group of them, "of *Delays*," "of *Cunning*," "of *Wisdom for a Man's Self*," "of *Despatch*," which show how vigilantly and to what purpose he had watched the treasurers and secretaries and intriguers of Elizabeth's and James's Courts; and there are curious self-revelations, as in the essay on *Friendship*. But there are also currents of better and larger feeling, such as those which show his own ideal of "*Great Place*," and what he felt of its dangers and duties. And mixed with the fantastic taste and conceits of the time, there is evidence in them of Bacon's keen delight in nature, in the beauty and scents of flowers, in the charm of open-air life, as in the essay on *Gardens*, "The purest of human pleasures, the greatest refreshment to the spirits of man."

But he had another manner of writing for what he held to be his more serious work. In the philosophical and historical works there is no want of attention to the flow and order and ornament of composition. When we come to the

Advancement of Learning, we come to a book which is one of the landmarks of what high thought and rich imagination have made of the English language. It is the first great book in English prose of secular interest; the first book which can claim a place beside the *Laws of Ecclesiastical Polity*. As regards its subject-matter, it has been partly thrown into the shade by the greatly enlarged and elaborate form in which it ultimately appeared, in a Latin dress, as the first portion of the scheme of the *Instauratio*, the *De Augmentis Scientiarum*. Bacon looked on it as a first effort, a kind of call-bell to awaken and attract the interest of others in the thoughts and hopes which so interested himself. But it contains some of his finest writing. In the *Essays* he writes as a looker-on at the game of human affairs, who, according to his frequent illustration, sees more of it than the gamesters themselves, and is able to give wiser and faithful counsel, not without a touch of kindly irony at the mistakes which he observes. In the *Advancement* he is the enthusiast for a great cause and a great hope, and all that he has of passion and power is enlisted in the effort to advance it. The *Advancement* is far from being a perfect book. As a survey of the actual state of knowledge in his day, of its deficiencies, and what was wanted to supply them, it is not even up to the materials of the time. Even the improved *De Augmentis* is inadequate; and there is reason to think the *Advancement* was a hurried book, at least in the later part, and it is defective in arrangement and proportion of parts. Two of the great divisions of knowledge — history and poetry — are despatched in comparatively short chapters; while in the division on "Civil Knowledge," human knowledge as it respects society, he inserts a long essay, obviously complete in itself and clumsily thrust in here, on the ways of getting on in the world, the means by which a man may be "*Faber fortunæ suæ*" — the architect of his own success; too lively a picture to be pleasant of the arts with which he had become acquainted in the process of rising. The book, too, has the blemishes of its own time; its want of simplicity, its inevitable though very often amusing and curious pedantries. But the *Advancement* was the first of a long line of books which have attempted to teach English readers how to think of knowledge; to make it really and intelligently the interest, not of the school or the study or the

laboratory only, but of society at large. It was a book with a purpose, new then, but of which we have seen the fulfilment. He wanted to impress on his generation, as a very practical matter, all that knowledge might do in wise hands, all that knowledge had lost by the faults and errors of men and the misfortunes of time, all that knowledge might be pushed to in all directions by faithful and patient industry and well-planned methods for the elevation and benefit of man in his highest capacities as well as in his humblest. And he further sought to teach them *how* to know; to make them understand that difficult achievement of self-knowledge, to know *what it is* to know; to give the first attempted chart to guide them among the shallows and rocks and whirlpools which beset the course and action of thought and inquiry; to reveal to them the "idols" which unconsciously haunt the minds of the strongest as well as the weakest, and interpose their delusions when we are least aware— "the fallacies and false appearances inseparable from our nature and our condition of life." To induce men to believe not only that there was much to know that was not yet dreamed of, but that the way of knowing needed real and thorough improvement; that the knowing mind bore along with it all kinds of snares and disqualifications of which it is unconscious; and that it needed training quite as much as materials to work on, was the object of the *Advancement*. It was but a sketch; but it was a sketch so truly and forcibly drawn, that it made an impression which has never been weakened. To us its use and almost its interest is passed. But it is a book which we can never open without coming on some noble interpretation of the realities of nature or the mind; some unexpected discovery of that quick and keen eye which arrests us by its truth; some felicitous and unthought-of illustration, yet so natural as almost to be doomed to become a commonplace; some bright touch of his incorrigible imaginativeness, ever ready to force itself in amid the driest details of his argument.

The *Advancement* was only one shape out of many into which he cast his thoughts. Bacon was not easily satisfied with his work; even when he published he did so, not because he had brought his work to the desired point, but lest anything should happen to him and it should "perish." Easy and unstudied as his

writing seems, it was, as we have seen, the result of unintermitted trouble and varied modes of working. He was quite as much a talker as a writer, and beat out his thoughts into shape in talking. In the essay on *Friendship* he describes the process with a vividness which tells of his own experience — "But before you come to that [the faithful counsel that a man receiveth from his friend], certain it is that whosoever hath his mind fraught with many thoughts, his wits and understanding do clarify and break up in the communicating and discoursing with another. He tosseth his thoughts more easily; he marshalleth them more orderly; he seeth how they look when they are turned into words; finally, he waxeth wiser than himself, and that more by an hour's discourse than by a day's meditation. It was well said by Themistocles to the King of Persia, 'That speech was like cloth of arras opened and put abroad, whereby the imagery doth appear in figure; whereas in thought they lie in packs.' Neither is this second fruit of friendship, in opening the understanding, restrained only to such friends as are able to give a man counsel. (They are, indeed, best.) But even without that, a man learneth of himself, and bringeth his own thoughts to light, and whetteth his wits against a stone which itself cuts not. In a word, a man were better relate himself to a *statua* or a picture, than to suffer his thoughts to pass in smother."

Bacon, as has been said, was a great maker of notes and note-books: he was careful not of the thought only, but of the very words in which it presented itself; everything was collected that might turn out useful in his writing or speaking, down to alternative modes of beginning or connecting or ending a sentence. He watched over his intellectual appliances and resources much more strictly than over his money concerns. He never threw away and never forgot what could be turned to account. He was never afraid of repeating himself, if he thought he had something apt to say. He was never tired of recasting and rewriting, from a mere fragment or preface to a finished paper. He has favourite images, favourite maxims, favourite texts, which he cannot do without. "*Da Fidei quæ sunt Fidei*" comes in from his first book to his last. The illustrations which he gets from the myth of Scylla, from Atalanta's ball, from Borgia's saying about the French marking their lodgings with chalk, the saying that God takes delight, like the

“innocent play of children,” “to hide his works in order to have them found out,” and to have kings as “his playfellows in that game,” these, with many others, reappear, however varied the context, from the first to the last of his compositions. An edition of Bacon, with marginal references and parallel passages, would show a more persistent recurrence of characteristic illustrations and sentences than perhaps any other writer.

The *Advancement* was followed by attempts to give serious effect to its lesson. This was nearly all done in Latin. He did so, because in these works he spoke to a larger and, as he thought, more interested audience; the use of Latin marked the gravity of his subject as one that touched all mankind; and the majesty of Latin suited his taste and his thoughts. Bacon spoke, indeed, impressively on the necessity of entering into the realm of knowledge in the spirit of a little child. He dwelt on the paramount importance of beginning from the very bottom of the scale of fact, of understanding the commonplace things at our feet, so full of wonder and mystery and instruction, before venturing on theories. The sun is not polluted by shining on a dunghill, and no facts were too ignoble to be beneath the notice of the true student of nature. But his own genius was for the grandeur and pomp of general views. The practical details of experimental science were, except in partial instances, yet a great way off; and what there was, he either did not care about or really understand, and had no aptitude for handling. He knew enough to give reality to his argument; he knew, and insisted on it, that the labour of observation and experiment would have to be very heavy and quite indispensable. But his own business was with great principles and new truths; these were what had the real attraction for him; it was the magnificent thoughts and boundless hopes of the approaching “kingdom of man” which kindled his imagination and fired his ambition. “He writes philosophy,” said Harvey, who had come to his own great discovery through patient and obscure experiments on frogs and monkeys— “he writes philosophy like a Lord Chancellor.” And for this part of the work, the stateliness and dignity of the Latin corresponded to the proud claims which he made for his conception of the knowledge which was to be. English seemed to him too homely to express

the hopes of the world, too unstable to be trusted with them. Latin was the language of command and law. His Latin, without enslaving itself to Ciceronian types, and with a free infusion of barbarous but most convenient words from the vast and ingenious terminology of the schoolmen, is singularly forcible and expressive. It is almost always easy and clear; it can be vague and general, and it can be very precise where precision is wanted. It can, on occasion, be magnificent, and its gravity is continually enlivened by the play upon it, as upon a background, of his picturesque and unexpected fancies. The exposition of his philosophical principles was attempted in two forms. He began in English. He began, in the shape of a personal account, a statement of a series of conclusions to which his thinking had brought him, which he called the "Clue of the Labyrinth," *Filum Labyrinthi*. But he laid this aside unfinished, and rewrote and completed it in Latin, with the title *Cogitata et Visa*. It gains by being in Latin; as Mr. Spedding says, "it must certainly be reckoned among the most perfect of Bacon's productions." The personal form with each paragraph begins and ends. "*Franciscus Bacon sic cogitavit ... itaque visum est ei*" gives to it a special tone of serious conviction, and brings the interest of the subject more keenly to the reader. It has the same kind of personal interest, only more solemn and commanding, which there is in Descartes's *Discours de la Méthode*. In this form Bacon meant at first to publish. He sent it to his usual critics, Sir Thomas Bodley, Toby Matthews, and Bishop Andrewes. And he meant to follow it up with a practical exemplification of his method. But he changed his plan. He had more than once expressed his preference for the form of *aphorisms* over the argumentative and didactic continuity of a set discourse. He had, indeed, already twice begun a series of aphorisms on the true methods of interpreting nature, and directing the mind in the true path of knowledge, and had begun them with the same famous aphorism with which the *Novum Organum* opens. He now reverted to the form of the aphorism, and resolved to throw the materials of the *Cogitata et Visa* into this shape. The result is the *Novum Organum*. It contains, with large additions, the substance of the treatise, but broken up and rearranged in the new form of separate impersonal generalised observations. The points and assertions

and issues which, in a continuous discourse, careful readers mark and careless ones miss, are one by one picked out and brought separately to the light. It begins with brief, oracular, unproved maxims and propositions, and goes on gradually into larger developments and explanations. The aphorisms are meant to strike, to awaken questions, to disturb prejudices, to let in light into a nest of unsuspected intellectual confusions and self-misunderstandings, to be the mottoes and watchwords of many a laborious and difficult inquiry. They form a connected and ordered chain, though the ties between each link are not given. In this way Bacon put forth his proclamation of war on all that then called itself science; his announcement that the whole work of solid knowledge must be begun afresh, and by a new, and, as he thought, infallible method. On this work Bacon concentrated all his care. It was twelve years in hand, and twelve times underwent his revision. “In the first book especially,” says Mr. Ellis, “every word seems to have been carefully weighed; and it would be hard to omit or change anything without injuring the meaning which Bacon intended to convey.” Severe as it is, it is instinct with enthusiasm, sometimes with passion. The Latin in which it is written answers to it; it has the conciseness, the breadth, the lordliness of a great piece of philosophical legislation.

The world has agreed to date from Bacon the systematic reform of natural philosophy, the beginning of an intelligent attempt, which has been crowned by such signal success, to place the investigation of nature on a solid foundation. On purely scientific grounds his title to this great honour may require considerable qualification. What one thing, it is asked, would not have been discovered in the age of Galileo and Harvey, if Bacon had never written? What one scientific discovery can be traced to him, or to the observance of his peculiar rules? It was something, indeed, to have conceived, as clearly as he conceived it, the large and comprehensive idea of what natural knowledge must be, and must rest upon, even if he were not able to realise his idea, and were mistaken in his practical methods of reform. But great ideas and great principles need their adequate interpreter, their *vates sacer*, if they are to influence the history of mankind. This was what Bacon was to science, to that great change in the

thoughts and activity of men in relation to the world of nature around them: and this is his title to the great place assigned to him. He not only understood and felt what science might be, but he was able to make others — and it was no easy task beforehand, while the wonders of discovery were yet in the future — understand and feel it too. And he was able to do this because he was one of the most wonderful of thinkers and one of the greatest of writers. The disclosure, the interpretation, the development of that great intellectual revolution which was in the air, and which was practically carried forward in obscurity, day by day, by the fathers of modern astronomy and chemistry and physiology, had fallen to the task of a genius, second only to Shakespeare. He had the power to tell the story of what they were doing and were to do with a force of imaginative reason of which they were utterly incapable. He was able to justify their attempts and their hopes as they themselves could not. He was able to interest the world in the great prospects opening on it, but of which none but a few students had the key. The calculations of the astronomer, the investigations of the physician, were more or less a subject of talk, as curious or possibly useful employments. But that which bound them together in the unity of science, which gave them their meaning beyond themselves, which raised them to a higher level and gave them their real dignity among the pursuits of men, which forced all thinking men to see what new and unsuspected possibilities in the knowledge and in the condition of mankind were opened before them, was not Bacon's own attempts at science, not even his collections of facts and his rules of method, but that great idea of the reality and boundless worth of knowledge which Bacon's penetrating and sure intuition had discerned, and which had taken possession of his whole nature. The impulse which he gave to the progress of science came from his magnificent and varied exposition of this idea; from his series of grand and memorable generalisations on the habits and faults of the human mind — on the difficult and yet so obvious and so natural precautions necessary to guide it in the true and hopeful track. It came from the attractiveness, the enthusiasm, and the persuasiveness of the pleading; from the clear and forcible statements, the sustained eloquence, the generous hopes, the deep and earnest purpose of the

Advancement and the *De Augmentis*; from the nobleness, the originality, the picturesqueness, the impressive and irresistible truth of the great aphorisms of the *Novum Organum*.

THE END

ENDNOTES.

[1] *Promus*: edited by Mrs. H. Pott, p. 475.

[2] Dr. Mozley.

[3] *Calendar of State Papers* (domestic), March 24, 1621.

[4] *Commons' Journals*, March 17, April 27; iii. 560, 594-6.

[5] *Commons' Journals*, iii. 578. In his copy of the *Novum Organum*, received *ex dono auctoris*, Coke wrote the same words.

"*Auctori consilium*.

Instaurare paras veterum documenta sophorum: Instaura leges justitiamque prius."

He added, with allusion to the ship in the frontispiece of the *Novum Organum*, "It deserveth not to be read in schools, But to be freighted in the ship of Fools."

The Mystery of Francis Bacon by William T. Smedley

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PREFACE.

Is there a mystery connected with the life of Francis Bacon? The average student of history or literature will unhesitatingly reply in the negative, perhaps qualifying his answer by adding: — Unless it be a mystery that a man with such magnificent intellectual attainments could have fallen so low as to prove a faithless friend to a generous benefactor in the hour of his trial, and, upon being raised to one of the highest positions of honour and influence in the State, to become a corrupt public servant and a receiver of bribes to pervert justice. — It is one of the most remarkable circumstances to be found in the history of any country that a man admittedly pre-eminent in his intellectual powers, spoken of by his contemporaries in the highest terms for his virtues and his goodness, should, in subsequent ages, be held up to obloquy and scorn and seldom be referred to except as an example of a corrupt judge, a standing warning to those who must take heed how they stand lest they fall. Truly the treatment which Francis Bacon has received confirms the truth of the aphorism, "The evil that men do lives after them; the good is oft interred with their bones."

It is not the intention in the following brief survey of Bacon's life to enter upon any attempt to vindicate his character. Since his works and life have come prominently before the reading public, he has never been without a defender. Montagu, Hepworth Dixon, and Spedding have, one after the other, raised their voices against the injustice which has been done to the memory of this great Englishman; and although Macaulay, in his misleading and inaccurate essay,[1] abounding in paradoxes and inconsistencies, produced the most powerful, though prejudiced, attack which has been made on Bacon's fame, he may almost be forgiven, because it provided the occasion for James Spedding in "Evenings with a Reviewer," to respond with a thorough and complete vindication of the man to whose memory he devoted his life. There rests on every member of the Anglo-Saxon race an obligation — imposed upon him by the benefits which he enjoys as the result of Francis Bacon's life-work — to read this vindication of

his character. Nor should mention be omitted of the essay by Mr. J. M. Robertson on “Francis Bacon” in his excellent work “Pioneer Humanists.” All these defenders of Bacon treat their subject from what may be termed the orthodox point of view. They follow in the beaten track. They do not look for Bacon outside his acknowledged works and letters. Since 1857, however, there has been steadily growing a belief that Bacon was associated with the literature of the Elizabethan and early Jacobean periods, and that he deliberately concealed his connection with it. That this view is scouted by what are termed the men of letters is well-known. They will have none of it. They refuse its claim to a rational hearing. But, in spite of this, as years go on, the number of adherents to the new theory steadily increases. The scornful epithets that are hurled at them only appear to whet their appetite, and increase their determination. Men and women devote their lives with enthusiasm to the quest for further knowledge. They dig and delve in the records of the period, and in the byeways of literature. Theories which appear extravagant and untenable are propounded. Whether any of these theories will come to be accepted and established beyond cavil, time alone can prove. But, at any rate, it is certain that in this quest many forgotten facts are brought to light, and the general stock of information as to the literature of the period is augmented.

In the following pages it is sought to establish what may be termed one of these extravagant theories. How far this attempt is successful, it is for the reader to judge. Notwithstanding all that may be said to the contrary, by far the greater part of Francis Bacon’s life is unknown. An attempt will be made by the aid of accredited documents and books to represent in a new light his youth and early manhood. It is contended that he deliberately sought to conceal his movements and work, although, at the same time, he left the landmarks by which a diligent student might follow them. In his youth he conceived the idea that the man Francis Bacon should be concealed, and be revealed only by his works. The motto, “*Mente videbor*” — by the mind I shall be seen — became the guiding principle of his life.

Chapter I. SOURCES OF INFORMATION.

The standard work is “The Life and Letters of Francis Bacon,” by James Spedding, which was published from 1858-1869. It comprises seven volumes, with 3,033 pages. The first twenty years of Bacon’s life are disposed of in 8 pages, and the next ten years in 95 pages, of which 43 pages are taken up with three tracts attributed to him. There is practically no information given as to what should be the most important years of his life. The two first volumes carry the narrative to the end of Elizabeth’s reign, when Bacon had passed his fortieth year. There is in them a considerable contribution to the history of the times, but a critical perusal will establish the fact that they add very little to our knowledge of the man, and they fail to give any adequate idea of how he was occupied during those years. In the seven volumes 513 letters of Bacon’s are printed, and of these no less than 238 are addressed to James I. and the Duke of Buckingham, and were written during the last years of his life. The biographies by Montagu and Hepworth Dixon are less pretentious, but contain little more information.

The first published Life of Bacon appears to have been unknown to all these writers. In 1631 was published in Paris a translation of the “Sylva Sylvarum,” as the “Histoire Naturelle de Mre. Francois Bacon.” Prefixed to it is a chapter entitled “Discours sur la vie de Mre. Francois Bacon, Chancelier D’Angleterre.” Reference will be made to this important discourse hereafter. It is sufficient for the present to say that it definitely states that during his youth Bacon travelled in Italy and Spain, which fact is to-day unrecognised by those who are accepted as authorities on his life. In 1647 there was published at Leyden a Dutch translation of forty-six of Bacon’s Essays — the “Wisdom of the Ancients” and the “Religious Meditations.” The translation is by Peter Boener, an apothecary of Nymegen, Holland, who was in Bacon’s service for some years as domestic apothecary, and occasional amanuensis, and quitted his employment in 1623. Boener added a Life of Bacon which is a mere fragment, but contains testimony by a personal attendant which is of value. In 1657 William Rawley issued a

volume of unpublished manuscripts under the title of "Resuscitatio," and to these he added a Life of the great Philosopher. Rawley is only once mentioned by Bacon. His will contains the sentence: "I give to my chaplain, Dr. Rawleigh, one hundred pounds." Rawley was born in 1590. When he became associated with his master is not known, but it could only have been towards the close of his life. Bacon appears to have reposed great confidence in him. In 1627,[2] the year following Bacon's death, he published the "Sylva Sylvarum." This must have been in the press before Bacon's death. Rawley subsequently published other works, and was associated with Isaac Gruter during the seventeenth century in producing on the continent various editions of Bacon's works.

Rawley's account of Bacon's life is meagre, and, having regard to the wealth of information which must have been at his disposal, it is a very disappointing production. Still, it contains information which is not to be found elsewhere. How incomplete it is may be gathered from the fact that there is no reference in it to Bacon's fall.

In 1665 was published a volume, "The Statesmen and Favourites of England since the Reformation." It was compiled by David Lloyd. The biographies of the Elizabethan statesmen were written by someone who was closely associated with them, and who appears to have had exceptional opportunities of obtaining information as to their opinions and characters.[3] As to how these lives came into Lloyd's possession nothing is known. Prefixed to the biographies are two pages containing "The Lord Bacon's judgment in a work of this nature." The chapter on Bacon is a most important contribution to the subject, but it also appears to have escaped the notice of Spedding, Hepworth Dixon, and Montagu. In 1658 Francis Osborn, in Letters to his son, gives a graphic description of the Lord Chancellor. Perhaps one can better picture Bacon as he was in the strength of his manhood from Osborne's account of him than from any other source. Thomas Bushell, another of Bacon's household dependents, published in 1628 "The First Part of Youth's Errors." In a letter therein addressed to Mr. John Eliot, he has left contributions to our stock of knowledge. There are also some miscellaneous

tracts written by him, and published about the year 1660, which contain references to Bacon.

Fuller's Worthies (1660) gives a short account of his life and character, eulogistic but sparse. In 1679 was published "Baconiana," or Certain Genuine Remains of Sir Francis Bacon, &c., by Bishop Tennison, but it contains no better account of his life. Winstanley's Worthies (1684) relies entirely on Rawley's Life, which is reproduced in it. Aubrey's brief Lives were written about 1680. There are references to Bacon in Arthur Wilson's "History of the Reign of James I."; in "The Court of James I.," by Sir W. A.; in "Simeon D'Ewes' Diary"; and, lastly, in his "Discoveries," Ben Jonson contributes a high eulogy on Bacon's character and attainments.

In 1702 Robert Stephens, the Court historiographer, published a volume of Bacon's letters, with an introduction giving some account of his life; and there was a second edition in 1736. In 1740 David Mallet published an edition of Bacon's works, and wrote a Life to accompany it. This was subsequently printed as a separate volume. As a biography it is without interest, as it contains no new facts as to his life.

In 1754 memoirs of the reign of Queen Elizabeth from the year 1581 to her death appeared, edited by Dr. Thomas Birch. These memoirs are founded upon the letters of the various members of the Bacon family. In 1763 a volume of letters of Francis Bacon was issued under the same editor.

Such are the sources of information which have come down to us in biographical notices.

In the British Museum, the Record Office, and elsewhere are the originals of the letters and the manuscripts of some of the tracts which Spedding has printed.

The British Museum also possesses two books of Memoranda used by Bacon. The Transportat is entirely, and the Promus is partly, in his handwriting. Beyond his published works, that is all that so far has been available.

Spedding remarks[4]: "What became of his books which were left to Sir John Constable and must have contained traces of his reading, we do not know, but very few appear to have survived."

Happily, Spedding was wrong. During the past ten years nearly 2,000 books which have passed through Bacon's hands have been gathered together. These are copiously annotated by him, and from these annotations the wide range and the methodical character of his reading may be gathered. Manuscripts which were in his library, and at least four common-place books in his handwriting, have also been recovered. Particulars of these have not yet been made public, but the advantage of access to them has been available in the preparation this volume.

Chapter II. THE STOCK FROM WHICH BACON CAME.

“A prodigy of parts he must be who was begot by wise Sir Nicholas Bacon, born of the accomplished Mrs. Ann Cooke,” says an early biographer.

Nicholas Bacon is said to have been born at Chislehurst, in Kent, in 1509. He was the second son of Robert Bacon, of Drinkstone, in Suffolk, Esquire and Sheep-reeve to the Abbey of Bury St. Edmunds. It is believed that he was educated at the abbey school. He speaks of his intimacy with Edmund Rougham, a monk of that house, who was noted for his wonderful proficiency in memory. He was admitted to the College of Corpus Christi, Cambridge, and took the degree of B.A. in 1526-7. He went to Paris soon afterwards, and on his return studied law at Gray’s Inn, being called to the Bar in 1533, and admitted ancient in 1536. He was appointed, in 1537, Clerk to the Court of Augmentations. In 1546 he was made Attorney of the Court of Wards and Liveries, and continued as such under Edward VI. Upon the accession of Mary he conformed to the change of religion and retained his office during her reign. Nicholas Bacon and William Cecil, each being a widower, had married sisters. When Elizabeth came to the throne Cecil became her adviser. He was well acquainted with Nicholas Bacon’s sterling worth and great capacity for business, and availed himself of his advice and assistance. The Queen delivered to Bacon the great seal, with the title of Lord Keeper, on the 22nd December, 1558, and he was sworn of the Privy Council and knighted. By letters patent, dated 14th April, 1559, the full powers of a Chancellor were conferred upon him. In 1563 he narrowly escaped the loss of his office for alleged complicity in the issue of a pamphlet espousing the cause of the House of Suffolk to the succession. He was restored to favour, and continued as Lord Keeper until his death in 1579. The Queen visited him at Gorhambury on several occasions. Sir Nicholas Bacon, in addition to performing the important duties of his high office in the Court of Chancery and in the Star Chamber, took an important part in all public affairs, both domestic and foreign,

from the accession of Elizabeth until his death. He first married Jane, daughter of William Fernley, of West Creting, Suffolk, by whom he had three sons and three daughters. For his second wife he married Anne, daughter of Sir Anthony Cooke, by whom he had two sons, Anthony and Francis. It is of more importance for the present purpose to know what type of man was the father of Francis Bacon. The author of the "Arte of English Poesie" (1589) relates that he came upon Sir Nicholas sitting in his gallery with the works of Quintillian before him, and adds: "In deede he was a most eloquent man and of rare learning and wisdome as ever I knew England to breed, and one that joyed as much in learned men and good witts." This author, speaking of Sir Nicholas and Burleigh, remarks, "From whose lippes I have seen to proceede more grave and naturall eloquence then from all the oratours of Oxford and Cambridge."

In his "Fragmenta Regalia" Sir Robert Naunton describes him as "an archpeece of wit and wisdom," stating that "he was abundantly facetious which took much with the Queen when it was suited with the season as he was well able to judge of his times." Fuller describes him as "a man of rare wit and deep experience," and, again, as "a good man, a grave statesman, and a father to his country." Bishop Burnet speaks of him as "not only one of the most learned and pious men, but one of the wisest ministers this nation ever bred." The observations of the author of "The Statesmen and Favourites of England in the Reign of Queen Elizabeth" are very illuminating. "Sir Nicholas Bacon," he says, "was a man full of wit and wisdome, a gentleman and a man of Law with great knowledge therein." He proceeds: "This gentleman understood his Mistress well and the times better: He could raise factions to serve the one and allay them to suit the others. He had the deepest reach into affairs of any man that was at the Council table: the knottiest Head to pierce into difficulties: the most comprehensive Judgement to surround the merit of a cause: the strongest memory to recollect all circumstances of a Business to one View: the greatest patience to debate and consider; (for it was he that first said, let us stay a little and we will have done the sooner:) and the clearest reason to urge anything that came in his way in the Court of Chancery.... Leicester seemed wiser than he was,

Bacon was wiser than he seemed to be; Hunsden neither was nor seemed wise.... Great was this Stateman's Wit, greater the Fame of it; which as he would say, *being nothing, made all things*. For Report, though but Fancy, begets Opinion; and Opinion begets substance.... He neither affected nor attained to greatness: *Mediocria firma*, was his principle and his practice. When Queen Elizabeth asked him, *Why his house was so little?* he answered, *Madam, my house is not too little for me, but you have made me too big for my House. Give me*, said he, *a good Estate rather than a great one. He had a very Quaint saying and he used it often to good purpose*, That he loved the Jest well but not the loss of his Friend.... He was in a word, a Father of his country and of *Sir Francis Bacon*."

Before speaking of Lady Ann Bacon, it is necessary to give some account of her father, Sir Anthony Cooke. He was a great-grandson of Sir Thomas Cooke, Lord Mayor of London, and was born at Giddy Hall, in Essex. Again the most valuable observations on his character are to be found in "The Lives of Statesmen and Favourites" before referred to. The author states that Sir Anthony "was one of the Governors to King Edward the sixth when Prince, and is charactered by Mr. Camden *Vir antiqua serenitate*. He observeth him also to be happy in his Daughters, learned above their Sex in Greek and Latine: namely, Mildred who married William Cecil, Lord Treasurer of England; Anne who married Nichlas Bacon, Lord Chancellor of England; Katherine who married Henry Killigrew; Elizabeth who married Thomas Hobby, and afterwards Lord Russell, and Margaret who married Ralph Rowlet."

"Gravity," says this author, "was the Ballast of Sir Anthony's Soul and General Learning its leading.... Yet he was somebody in every Art, and eminent in all, the whole circle of Arts lodging in his Soul. His Latine, fluent and proper; his Greek, critical and exact; his Philology and Observations upon each of these languages, deep, curious, various and pertinent: His Logic, rational; his History and Experience, general; his Rhetorick and Poetry, copious and genuine; his Mathematiques, practicable and useful. Knowing that souls were equal, and that Women are as capable of Learning as Men, he instilled that to his Daughters at night, which he had taught the Prince in the day, being resolved to have Sons by

education, for fear he should have none by birth; and lest he wanted an Heir of his body, he made five of his minde, for whom he had at once a *Gavel-kind* of affection and of Estate."

"Three things there are before whom (was Sir Anthony's saying) I cannot do amis: 1, My Prince; 2, my conscience; 3, my children. Seneca told his sister, That though he could not leave her a good portion, he would leave her a good pattern. Sir Anthony would write to his Daughter *Mildred, My example is your inheritance and my life is your portion*....

"He said first, and his Grandchilde my Lord Bacon after him, That the Joys of Parents are Secrets, and so are their Griefs and Fears.... Very providently did he secure his eternity, by leaving the image of his nature in his children and of his mind in his Pupil.... The books he advised were not *many* but *choice*: the business he pressed was not reading, but digesting.... Sir John Checke talked merrily, Dr. Coxe solidly and Sir Anthony Cooke weighingly: A faculty that was derived with his blood to his Grandchilde Bacon."

Such then was the father of Lady Anne Bacon. She and her sisters were famous as a family of accomplished classical scholars. She had a thorough knowledge of Greek and Latin. An Apologie ... in defence of the Churche of England by Dr. Jewel, Bishop of Salisbury, was translated by her from the Latin and published in 1564. Sir Anthony had been exiled during Mary's reign, for his adherence to the Protestant faith. His daughter, Anne, inherited, not only his classical accomplishments, but his strong Puritan faith and his hatred of Popery. Francis Bacon describes her as "A Saint of God." There is a portrait of her painted by Nathaniel Bacon, her stepson, in which she appears standing in her pantry habited as a cook. In feature Francis appears to have resembled his mother. He "had the same pouting lip, the same round head, the same straight nose and Hebe chin."

Chapter III. FRANCIS BACON, 1560 TO 1572.

In the registry of St. Martin's will be found this entry: Mr. Franciscus Bacon 1560 Jan 25 (*filius D'm Nicho Bacon Magni Angliæ sigilli custodis*)." Rawley in his "Life of the Honourable Author" says: "Francis Bacon, the glory of his age and nation, was born in York House or York Place, in the Strand, on the two and twentieth day of January in the year of our Lord 1560." He relates that "His first and childish years were not without some mark of eminency; at which time he was endued with that pregnancy and towardness of wit, as they were pressages of that deep and universal apprehension which was manifest in him afterward." "The Queen then delighted much to confer with him, and to prove him with questions unto whom he delivered himself with that gravity and maturity above his years that Her Majesty would often term him '*Her young Lord Keeper*.' Being asked by the Queen how old he was he answered with much discretion, being then but a boy[5] that he was two years younger than Her Majesty's happy reign, with which answer the queen was much taken." In the "Lives of the Statesmen and Favourites of Queen Elizabeth" there is reference to the early development of his mental and intellectual faculties. The author writes:— "He had a large mind from his Father and great abilities from his Mother; His parts improved more than his years, his great fixed and methodical memory, his solide judgement, his quick fancy, his ready expression, gave assurance of that profound and universal comprehension of things which then rendered him the observation of great and wise men; and afterwards the wonder of all." The historian continues:— "He never saw anything that was not noble and becoming," "at twelve his industry was above the capacity and his minde beyond the reache of his contemporaries."

This boy so marvellously endowed was brought up in surroundings which were ideal for his development. His father, a man of erudition, a wit and orator, occupying one of the highest positions in the country, his mother a lady of great classical accomplishments, who had enjoyed the benefits of an education and

training by her father, that eminent scholar, Sir Anthony Cooke, and, lastly, there was this man — his grandfather — living within riding distance from his home. It seems inevitable that the natural powers of young Francis must have excited a keen interest in the old tutor of Edward VI., who had devoted his evenings to imparting to his daughters what he had taught the Prince during the day, so that if he left behind him no heirs of his body, he might leave heirs of his mind. The boy Francis was, indeed, a worthy heir of his mind, and it is impossible to believe otherwise than that Sir Anthony Cooke would throw himself heart and soul into the education of his grandchild, but no statement or tradition has come down to this effect. It may be, however, that a sentence which has already been quoted from "The Lives of Statesmen and Favourites" is intended to imply that Francis was the pupil of Sir Anthony: "He said first and his Grandchilde my Lord Bacon after him, That the Joys of Parents are Secrets, and so their Griefs and Fears.... Very providently did he secure his Eternity, by leaving the image of his nature in his Children and of his mind in his Pupil." The pupil referred to was not Edward VI., for he died twenty-three years before Sir Anthony, and he could not, therefore, have left the image of his mind in the young King. Following directly after the sentence "He said first and his Grandchilde Lord Bacon after him" it is possible that the reference may be to the boy Francis. Certainly Sir Anthony "would secure his eternity" if he left the image of his mind in his "Grandchilde." In any case the prodigious natural powers of the boy were placed in an environment well suited for their full development.

The historian says that "at twelve his industry was above the capacity and his mind beyond the reache of his Contemporaries." Who were the contemporaries alluded to? Those of his own age, or those who were living at the time? A boy of twelve, he excelled others in his great industry and the wide range of his mind. This industry appears to have accompanied him through life, for Rawley states that "he would ever interlace a moderate relaxation of his mind with his studies, as walking or taking the air abroad in his coach or some other befitting recreation; and yet he would lose no time, inasmuch as upon the first and immediate return he would fall to reading again, and so suffer no movement of

time to slip from him without some present improvement." It is a remarkable fact on which too much stress cannot be laid that in the two Lives of Bacon, scanty as they are, by contemporary writers, his exceptional industry is pointed out. There are certainly no visible fruits of this industry.

Although there is no definite information as to what was the state of Francis Bacon's education at twelve, there is testimony as to that of some of his contemporaries. Three instances will suffice.

Philip Melancthon (whose family name was Schwartzerd) was born in 1497. His education was at an early age directed by his maternal grandfather, John Reuter. After a short stay at a public school at Bretten he was removed to the academy at Pforzheim. Here, under the tutorship of John Reuchlin, an elegant scholar and teacher of languages, he acquired the taste for Greek literature in which he subsequently became so distinguished. Here his genius for composition asserted itself. Amongst other poetical essays in which he indulged when eleven years of age, he wrote a humorous piece in the form of a comedy, which he dedicated to his kind friend and instructor, Reuchlin, in whose presence it was performed by the schoolfellows of the youthful author. After a residence of two years at Pforzheim, Philip matriculated at the University of Heidelberg on the 13th October, 1509, being eleven years and nine months old. Young as he was, he appears to have been employed to compose most of the harangues that were delivered in the University, besides writing some pieces for the professors themselves. Here, at this early age, he composed his "Rudiments of the Greek Language," which were afterwards published.

Agrippa d'Aubigné was born in 1550 and died in 1630. At six years of age he read Latin, Greek, and Hebrew. When ten years he translated the Crito. Italian and Spanish were at his command.

Thomas Bodley was born in 1544 and died in 1612. In the short autobiography which he left he makes the following statement as to how far his education had advanced when his father decided to fix his abode in the city of Geneva in 1556: —

"I was at that time of twelve yeares age but through my fathers cost and care sufficiently instructed to become an auditour of *Chevalerius* in Hebrew, of *Berealdus* in Greeke, of *Calvin* and *Beza* in Divinity and of some other Professours in that University, (which was newly there erected) besides my domesticall teachers, in the house of Philibertus Saracenus, a famous Physitian in that City with whom I was boarded; when Robertus Constantinus that made the Greek Lexicon read Homer with me."

Bodley was undoubtedly proficient in French, for Calvin and Beza lectured in French. The "Institution of the Christian Religion," Calvin's greatest work, although published in Latin in 1536, was translated by him into French, and issued in 1540 or 1541. This translation is one of the finest examples of French prose. Bodley's English was probably very poor, and for a very good reason — there was no English language worthy of comparison with the languages of France, Italy, or Spain. It had yet to be created.

It is fair to assume that at twelve years of age Francis Bacon was as proficient in languages as were Philip Melancthon, Agrippa d'Aubigné, or Thomas Bodley at that age. He, therefore, had at least a good knowledge of Latin, Greek, Hebrew, French, and such English as there was.

Another class of evidence is now available. It has already been stated that a large number of Bacon's books have been recovered, copiously annotated by him. Some of these books bear the date when the annotations were made. For the most part the marginal notes appear to be aids to memory, but in many cases they are critical observations of the text. These are, however, dealt with in a subsequent chapter.

Gilbert Wats, in dedicating to Charles I. his interpretation of "The Advancement of Proficiency of Learning" (1640), makes a statement which throws light on the course of Bacon's studies, and this strongly supports the present contention. He says: —

"He (Bacon) after he had survaied all the Records of Antiquity, after the volume of men, betook himselfe to the study of the volume of the world; and

having conquerd whatever books possest, set upon the Kingdome of Nature and carried that victory very farre."

Speaking of him as a boy his biographer[6] describes his memory as "fixed and methodical," and in another place he says "His judgment was solid yet his memory was a wonder."

The extent of his reading at this time had been very wide. He had already taken all knowledge to be his province, and was with that industry which was beyond the capacity of his contemporaries rapidly laying the foundations which subsequently justified this claim.

Chapter IV. AT CAMBRIDGE.

Francis Bacon went to reside at Trinity College, Cambridge, in April, 1573, being 12 years and 3 months of age. While the plague raged he was absent from the end of August, 1574, until the beginning of March following. He finally left the University at Christmas, 1575, about one month before his fifteenth birthday.

Rawley says he was there educated and bred under the tuition of Dr. John Whitgift,[7] then master of the College, afterwards the renowned Archbishop of Canterbury, a prelate of the first magnitude for sanctity, learning, patience, and humility; under whom he was observed to have been more than an ordinary proficient in the several arts and sciences.

Amboise, in the "Discours sur la vie de M. Bacon," prefixed to the "Histoire Naturelle," Paris, 1631, says: "Le jugement et la mémoire ne furent jamais en aucun home au degrè qu'ils estoient en celuy-cy; de sorte qu'en bien peu de temps il se rendit fort habile en toutes les sciences qui s'apprennent au Collège. Et quoi que deslors il fust jugé capable des charges les plas importantes, neanmoins pour ne tomber dedans la mesme faute que sont d'ordinaire les jeunes gens de son estoffe, qui par une ambition trop précipitée portent souvent au maniement des grandes affaires un esprit encore tout rempli des crudités de l'escole, Monsieur Bacon se voulut acquérir cette science, qui rendit autres-fois Ulysse si recommandable et luy fit mériter le nom de sage, par la connoissance des mœurs de tant de nations diverses." That is all that can be said about his career at Cambridge except that Rawley adds:

"Whilst he was commorant in the University, about sixteen years of age (as his lordship hath been pleased to impart unto myself), he first fell into the dislike of the philosophy of Aristotle; not for the worthlessness of the author, to whom he would ever ascribe all high attributes, but for the unfruitfulness of the way; being a philosophy (as his lordship used to say) only strong for disputations and contentions, but barren of the production of works for the benefit of the life of man; in which mind he continued to his dying day."

As Bacon left Cambridge at Christmas, 1575, before he was 15 years of age, Rawley's recollection must have been at fault when he mentions the age of 16 as that when Bacon formed this opinion.

There is another account of this incident in which it is stated that Francis Bacon left Cambridge without taking a degree as a protest against the manner in which philosophy was taught there. In the preface to the "Great Instauration" Bacon repeats his protest: "And for its value and utility, it must be plainly avowed that that wisdom which we have derived principally from the Greeks is but like the boyhood of knowledge and has the characteristic property of boys: it can talk but it cannot generate: for it is fruitful of controversies but barren of works."

This is merely a re-statement of the position he took up when at Cambridge. So this boy set up his opinion against that of the recognised professors of philosophy of his day, against the whole authority of the staff of the University, on a fundamental point on the most important question which could be raised as to the pursuit of knowledge. It is not too much to say that he had at this time covered the whole field of knowledge in a manner more thorough than it had ever been covered before, and with his mind, which was beyond the reach of his contemporaries, he began to lay down those laws which revolutionised all thought and have become the accepted method by which the pursuit of knowledge is followed.

It is necessary again to seek for parallels to justify the position which will be claimed for Francis Bacon at this period.

Philip Melancthon affords one and James Crichton another. At Heidelberg Melancthon remained three years. He left when he was 15, the principal cause of his leaving being disappointment at being refused a higher degree in the University solely, it is alleged, on account of his youth. In September, 1512, he was entered at the University of Tubingen, where, in the following year, before he was 17 years of age, he was created Doctor in Philosophy or Master of Arts. He then commenced a course of public lectures, embracing an extraordinary variety of subjects, including the learned languages, rhetoric, logic, ethics,

mathematics, and theology. Here in 1516 he put forth his revision of the text of Terence. Besides he entered into an undertaking with Thomas Anshelmus to revise all the books printed by him. He bestowed great labour on a large work in folio by Nauclerus, which he appears to have almost entirely re-written.

So much romance has been thrown around James Crichton that it is difficult to obtain the real facts of his life. Sir Thomas Urquhart, in "Discovery of a Most Exquisite Jewel," published in 1652, gives a biography which is, without doubt, mainly apocryphal. Certain facts, however, are well established. He was born in the same year as was Bacon (1560). At 10 years of age he entered St. Andrew's University, and in 1575 (the year Bacon left Cambridge) took his degree, coming out third in the first class. In 1576 he went to France, as did Bacon — to Paris. In the College of Navarre he issued a universal challenge. This he subsequently repeated at Venice with equal success; that is, to all men, upon all things, in any of twelve languages named. The challenge is broad and formal. He pledged himself to review the schoolmen, allowed his opponents the privilege of selecting their topics — mathematics, no less than scholastic lore — either from branches publicly or privately taught, and promised to return answers in logical figure or in numbers estimated according to their occult power, or in any of a hundred sorts of verse. He is said to have justified before many competent witnesses his magnificent pretensions.

What Philip Melancthon was at fifteen, what James Crichton was at sixteen, Francis Bacon may have been. All the testimony which his contemporaries afford, especially having regard to his after life, justify the assertion that in knowledge and acquirements he was at least their equal.

About eighteen months later his portrait was painted by Hilliard, the Court miniature painter, who inscribed around it, as James Spedding says, the significant words — the natural ejaculation, we may presume, of the artist's own emotion— "*Si tabula daretur digna animum mallem.*" If one could only find materials worthy to paint his mind.

Chapter V. EARLY COMPOSITIONS.

It is at this stage that the mystery of Francis Bacon begins to develop. Every channel through which information might be expected appears to be blocked. Besides a few pamphlets, in the production of which little time would be occupied, there came nothing from his pen until 1597 when, at the age of 37, the first edition of the essays was published — only ten short essays containing less than 6,000 words. In 1605, when 45, he addressed to James I. the "Two Books on the Advancement of Learning," containing less than 60,000 words. It would require no effort on Bacon's part to write either of these volumes. He could turn out the "Two Books of the Advancement of Learning" with the same facility that a leader writer of the *Times* would write his daily articles. He was to all intents and purposes unoccupied. Until 1594 he had not held a brief, and he never had any practice at the Bar worth considering. He was a member of Parliament, but the House seldom sat, and never for long periods. Bacon's life is absolutely unaccounted for. It is now proposed, by the aid of the literature of the period from 1576 to 1620, and with the help of information derived from his own handwriting, to trace, step by step, the results of his industry, and to supply the reason for the concealment which he pursued.

There is an entry in the Book of Orders of Gray's Inn under date 21st November, 1577, that Anthony and Francis Bacon (who had been admitted members 27th June, 1576, "*de societate magistrorum*") be admitted to the Grand Company, *i.e.*, to the Degree of Ancients, a privilege to which they were entitled as sons of a judge. From a letter subsequently written by Burghley, it is known that one Barker was appointed as their tutor of Law. Apparently it was intended that they should settle down to a course of legal training, but this plan was abandoned, at any rate, as far as Francis was concerned. Sir Amias Paulet, who was Chancellor of the Garter, a Privy Counsellor, and held in high esteem by the Queen,[8] was about to proceed to Paris to take the place of Dr. Dale as Ambassador at the Court of France. There is a letter written from Calais, dated

25th September, 1576, from Sir Amias to Lord Burghley, in which this paragraph appears: “My ordinary train is no greater than of necessity, being augmented by some young gentlemen, whereof one is Sir Nicholas Throgmorton’s son, who was recommended to me by her Majesty, and, therefore, I could not refuse him. The others are so dear to me and the most part of them of such towardness, as my good hope of their doing well, and thereafter they will be able to serve their Prince and country, persuades me to make so much to excuse my folly as to entreat you to use your favour in my allowance for my transportations, my charges being increased by these extraordinary occasions.”

Francis Bacon was one of this group of young gentlemen. Rawley states that “after he had passed the circle of the liberal arts, his father thought fit to frame and mould him for the arts of state; and for that end sent him over into France with Sir Amyas Paulet then employed Ambassador lieger into France.”

There are grounds for believing that Bacon’s literary activity had commenced before he left England. There is abundant evidence to prove that it was the custom at this period for authors who desired to conceal their authorship to substitute for their own names, initials or the names of others on the title-pages. Two instances will suffice: “The Arte of English Poesie” was published in 1589, but written several years previously. The author says:— “I know very many notable Gentlemen in the Court that have written commendably, and suppressed it agayne, or els suffred it to be publisht without their owne names to it as if it were a discredit for a Gentleman to seeme learned, and to shew himself amorous of any learned Art.” There is a bare-faced avowal of how names were placed on title-pages in a letter which exists from Henry Cuffe to Mr. Reynolds. Cuffe, an Oxford scholar of distinction, was a close companion and confidant of Essex. After the capture and sacking of Cadiz by Essex and Howard, the former deemed it important that his version of the affair should be the first to be published in England. Cuffe, therefore, started off post haste with the manuscript, but was taken ill on his arrival at Portsmouth, and could not proceed. He despatched the manuscript by a messenger with a letter to “Good Mr. Reynoldes,” who was a

private Secretary of Essex. He was to cause a transcript to be made and have it delivered to some good printer, in good characters and with diligence to publish it. Reynoldes was to confer with Mr. Greville (Fulke Greville, afterwards Lord Brooke) "whether he can be contented to suffer the two first letters of his name to be used in the inscription." "If he be unwilling," adds Cuffe, "you may put R.B. which some no doubt will interprete to be Beale, but it skills not." That this was a common practice is admitted by those acquainted with Elizabethan literature. If any of Bacon's writings were published prior to the trifle which appeared in 1597 as Essaies, his name was suppressed, and it would be probable some other name would appear on the title-page. There is a translation of a classical author, bearing date 1572, which is in the Baconian style, but which need not be claimed for him without further investigation.

The following suggestion is put forward with all diffidence, but after long and careful investigation. Francis Bacon was the author of two books which were published, one before he left England, and the other shortly after. The first is a philosophical discourse entitled "The Anatomie of the Minde." Newlie made and set forth by T.R. Imprinted at London by I.C. for Andrew Maunsell, 1576, 12mo. The dedication is addressed to Master Christopher Hatton, and the name of Tho. Rogers is attached to it. There was a Thomas Rogers who was Chaplain to Archbishop Bancroft, and the book has been attributed to him, apparently only because no other of the same name was known. There was published in 1577 a translation by Rogers of a Latin book "Of the Ende of the World, etc." and there are other translations by him published between then and 1628. There are several sermons, also, but the style of these, the matter, and the manner of treatment are quite distinct from those of the book under consideration. There is nothing of his which would support the assignment to him of "The Anatomie of the Mind." It is foreign to his style.

Having regard to the acknowledged custom of the times of putting names other than the author's on title-pages, there is no need for any apology for expressing doubt as to whether the book has been correctly placed to the credit of the Bishop Bancroft's chaplain. In the address To the Reader the author says:

"I dyd once for my profite in the Universitie, draw into Latin tables, which since for thy profite (Christian Reader) at the request of a gentleman of good credite and worship, I have Englished and published in these two books." There is in existence a copy of the book with the printer's and other errors corrected in Bacon's own handwriting.

Bearing date 1577, imprinted at London for Henri Cockyn, is an octavo book styled, *"Beautiful Blossoms" gathered by John Byshop from the best trees of all kyndes, Divine, Philosophicall, Astronomicall, Cosmographical, Historical and Humane that are growing in Greece, Latium, and Arabia, and some also in vulgar orchards as wel fro these that in auncient time were grafted, as also from them which with skilful head and hand beene of late yeare's, yea, and in our dayes planted: to the unspeakable, both pleasure and profite of all such as wil vouchsafe to use them.* On the title-page are the words, "The First Tome," but no further volume was published. As to who or what John Byshop was there is no information available. His name appears on no other book. The preface is a gem of musical sounding words. It contains the sentence, "let them pass it over and read the rest which are all as plaine as Dunstable Way." Bacon's home was within a few miles of Dunstable Way, which was the local term for the main road.

It is impracticable here to give at length the grounds upon which it is believed that Francis Bacon was the author of these two books. Each of them is an outpouring of classical lore, and is evidently written by some young man who had recently assimilated the writings of nearly every classical author. In this respect both correspond with the manner of "The French Academie," to which the attention of the reader will shortly be directed, whilst in "The Anatomie of the Minde" the treatment of the subject is identical with that in the latter. Failing actual proof, the circumstantial evidence that the two books are from the same pen is almost as strong as need be.

Some time in October, 1576, Sir Amyas Paulet would reach Paris, accompanied by Bacon. The only fragment of information which is given by his biographers of any occurrence during his stay there is obtained from Rawley. He

states that “Sir Amias Paulet after a while held him fit to be entrusted with some message, or advertisement to the Queen, which having performed with great approbation, he returned back into France again with intention to continue for some years there.” In his absence in France, his father, the Lord Keeper, died. This was in February, 1578-9. If he returned shortly after news of his father’s death reached him, his stay on the Continent would cover about two and a-half years. As to what he was doing nothing is known, but Pierre Amboise states that “France, Italy, and Spain as the most civilised nations of the whole world were those whither his desire for Knowledge carried him.”

Chapter VI. BACON'S "TEMPORIS PARTUS MAXIMUS."

Francis Bacon was at Blois with Sir Amias Paulet in 1577. In the same year was published the first edition of the first part of "Académie Francoise par Pierre de la Primaudaye Esceuyer, Seignor dudict lieu et de la Barrée, Gentilhomme ordinaire de la chambre du Roy." The dedication, dated February, 1577 (*i.e.*, 1578) is addressed, "Au Tres-chrestien Roy de France et de Polongne Henry III. de ce nom." The first English translation, by T. B., was "published in 1586[9], imprinted at London by Edmund Bollifant for G. Bishop and Ralph Newbery." Other parts of "The Academy" followed at intervals of years, but the first and only complete edition in English bears date 1618, and was printed for Thomas Adams. Over the dedication is the well-known archer emblem. It is a thick folio volume, with 1,038 pages double columns. It may be termed the first Encyclopædia which appeared in any language, and is, perhaps, one of the most remarkable productions of the Elizabethan era. Little is known of Pierre de la Primaudaye. The particulars for his biography in the "Biographie Nationale" seem to have been taken from references made to the author in the "French Académie" itself. In the French Edition, 1580, there is a portrait of a man, and under it the words "Anag. de L'auth. Par la prierè Dieu m'ayde." The following is an extract from the dedication: —

"The dinner of that prince of famous memorie, was a second table of Salomon, vnto which resorted from euerie nation such as were best learned, that they might reape profit and instruction. Yours, Sir, being compassed about with those, who in your presence daily discourse of, and heare discoursed many graue and goodly matters, seemeth to be a schoole erected to teach men that are borne to vertue. And for myselfe, hauing so good hap during the assemblie of your Estates at Blois, as to be made partaker of the fruit gathered thereof, it came in my mind to offer vnto your Maiestie a dish of diuers fruits, which I gathered in a Platonicall garden or orchard, otherwise called an Academie, where I was not

long since with certaine yoong Gentlemen of Aniou my companions, discoursing togither of the institution in good maners, and of the means how all estates and conditions may liue well and happily. And although a thousand thoughts came then into my mind to hinder my purpose, as the small authoritie, which youth may or ought to haue in counsell amongst ancient men: the greatnes of the matter subject, propounded to be handled by yeeres of so small experience; the forgetfulness of the best foundations of their discourses, which for want of a rich and happie memorie might be in me: my iudgement not sound ynough, and my profession vnfit to set them downe in good order: briefly, the consideration of your naturall disposition and rare vertue, and of the learning which you receiuve both by reading good authors, and by your familiar communication with learned and great personages that are neere about your Maiestie (whereby I seemed to oppose the light of an obscure day, full of clouds and darkness, to the bright beames of a very cleere shining sonne, and to take in hand, as we say, to teach Minerua). I say all these reasons being but of too great weight to make me change my opinion, yet calling to mind manie goodlie and graue sentences taken out of sundry Greeke and Latine Philosophers, as also the woorthie examples of the liues of ancient Sages and famous men, wherewith these discourses were inriched, which might in delighting your noble mind renew your memorie with those notable sayings in the praise of vertue and dispraise of vice, which you alwaies loued to heare: and considering also that the bounty of Artaxerxes that great Monarke of the Persians was reuiued in you, who receiued with a cheerfull countenance a present of water of a poore laborer, when he had no need of it, thinking to be as great an act of magnanimitie to take in good part, and to receiue cheerfully small presents offered with a hartie and good affection, as to giue great things liberally, I ouercame whatsoeuer would haue staied me in mine enterprise."

It appears, therefore, that the author by good hap was a visitor at the Court of Henry III. when at Blois; that he was there studying with certain young gentlemen of Anjou, his companions; that he was a youth, and of years of small experience; that his memory might not be sufficiently rich and happy, his

judgment not enough, and his profession unfit in recording the discourses of himself and his companions.

"The Author to the Reader" is an essay on Philosophy, every sentence in which seems to have the same familiar sound as essays which subsequently appeared under another name. The contents of the several chapters are enumerated thus: "Of Man," "Of the Body and Soule," *etc.*

The first chapter contains a description of how the "Academie" came about. An ancient wise gentleman of great calling having spent the greater part of his years in the service of two kings, and of his country, France, for many and good causes had withdrawn himself to his house. He thought that to content his mind, which always delighted in honest and vertuous things, he could not bring greater profit to the Monarchie of France, than to lay open and preserve and keep youth from the corruption which resulted from the over great license and excessive liberty granted to them in the Universities. He took unto his house four young gentlemen, with the consent of their parents who were distinguished noblemen. After he had shown these young men the first grounds of true wisdom, and of all necessary things for their salvation, he brought into his house a tutor of great learning and well reported of his good life and conversation, to whom he committed their instruction. After teaching them the Latin tongue and some smattering of Greek he propounded for their chief studies the moral philosophy of ancient sages and wise men, together with the understanding and searching out of histories which are the light of life. The four fathers, desiring to see what progress their sons had made, decided to visit them. And because they had small skill in the Latin tongue, they determined to have their children discourse in their own natural tongue of all matters that might serve for the instruction and reformation of every estate and calling, in such order and method as they and their master might think best. It was arranged that they should meet in a walking place covered over with a goodly green arbour, and daily, except Sundays, for three weeks, devote two hours in the morning and two hours after dinner to these discourses, the fathers being in attendance to listen to their sons. So interesting did these discussions become that the period was often extended to three or four

hours, and the young men were so intent upon preparation for them that they would not only bestow the rest of the days, but oftentimes the whole night, upon the well studying of that which they proposed to handle. The author goes on to say:— "During which time it was my good hap to be one of the companie when they began their discourses, at which I so greatly wondered that I thought them worthy to be published abroad." From this it would appear that the author was a visitor, privileged, with the four fathers and the master, to listen to the discourses of these four young men. But, a little further on the position is changed; one of the four young men is, without any explanation, ignored, and his father disappointed! For the author takes his place, as will be seen from the following extract: —

"And thus all fower of us followed the same order daily until everie one in his course had intreated according to appointment, both by the precepts of doctrine, as also by the examples of the lives of ancient Sages and famous men, of all things necessary for the institution of manners and happie life of all estates and callings in this French Monarchie. But because I knowe not whether, in naming my companions by their proper names, supposing thereby to honour them as indeede they deserve it, I should displease them (which thing I would not so much as thinke) I have determined to do as they that play on a Theater, who under borrowed maskes and disguised apparell, do represent the true personages of those whom they have undertaken to bring on the stage. I will therefore call them by names very agreeable to their skill and nature: the first Aser which signifieth *Felicity*: the second Amana which is as much to say as *Truth*: the third Aram which noteth to us *Highness*; and to agree with them as well in name as in education and behaviour. I will name myself Achitob[10] which is all one with *Brother of goodness*. Further more I will call and honour the proceeding and finishing of our sundry treatises and discourses with this goodlie and excellent title of Academie, which was the ancient and renowned school amongst the Greek Philosophers, who were the first that were esteemed, and that the place where Plato, Xenophon, Poleman, Xenocrates, and many other excellent personages, afterward called Academicks, did propound & discourse of all

things meet for the instruction and teaching of wisdome: wherein we purposed to followe them to our power, as the sequele of our discourses shall make good proofe."

And then the discourses commence.

"Love's Labour's Lost" was published in 1598, and was the first quarto upon which the name of Shakespeare was printed. The title-page states that it is "newly corrected and augmented," from which it may be inferred that there was a previous edition, but no copy of such is known. The commentators are in practical agreement that it was probably the first play written by the dramatist.

There are differences of opinion as to the probable date when it was written. Richard Grant White believes this to be not later than 1588, Knight gives 1589, but all this is conjecture.

The play opens with a speech by Ferdinand: —

"Let Fame that all hunt after in their lives,
Live registred upon our brazen Tombes,
And then grace us, in the disgrace of death:
When spight of cormorant devouring time,
Th' endevour of this present breath may buy:
That honour which shall bate his sythes keene edge,
And make us heyres of all eternitie.
Therefore brave Conquerours, for so you are,
That warre against your own affections,
And the huge Armie of the worlds desires.
Our late Edict shall strongly stand in force,
Navar shall be the wonder of the world.
Our Court shall be a little Achademe,
Still and contemplative in living Art.
You three, Berowne, Doumaine, and Longavill,
Have sworne for three yeeres terme, to live with me,
My fellow Schollers, and to keepe those statutes
That are recorded in this schedule heere.

Your oathes are past, and now subscribe your names;
That his owne hand may strike his honour downe,
That violates the smallest branch heerein:
If you are arm'd to doe, as sworne to do,
Subscribe to your deepe oathes, and keepe it to."

Four young men in the French "Academie" associated together, as in "Love's Labour Lost," to war against their own affections and the whole army of the world's desires. Dumaine, in giving his acquiescence to Ferdinand, ends: —

"To love, to wealth, to pompe, I pine and die
With all these living in Philosophie."

Philosophie was the subject of study of the four young men to the "Academie."

Berowne was a visitor, for he says: —
"I only swore to study with your grace
And stay heere in your Court for three yeeres' space."

Upon his demurring to subscribe to the oath as drawn, Ferdinand retorts: —

Well, sit you out: go home, Berowne: adue."

To which Berowne replies: —

No, my good lord; I have sworn to stay with you."

Achitob was a visitor at the Academie in France. There are other points of resemblance, but sufficient has been said to warrant consideration of the suggestion that the French "Academie" contains the serious studies of the four young men whose experiences form the subject of the play.

The parallels between passages in the Shakespeare plays and the French "Academie" are numerous, but they form no part of the present contention.

One of these may, however, be mentioned. In the third Tome the following passage occurs[11]: —

Psal. xix.: “It is not without cause that the Prophet said (The heavens declare the glory of God, and the earth sheweth the workes of his handes) For thereby he evidently teacheth, as with the finger even to our eies, the great and admirable providence of God their Creator; even as if the heavens should speake to anyone. In another place it is written (Eccles. xliii.): (This high ornament, this cleere firmament, the beauty of the heaven so glorious to behold, tis a thing full of Majesty).”

On turning to the revised version of the Bible it will be found that the first verse is thus translated: “The pride of the height, the cleare firmament the beauty of heaven with his glorious shew.” The rendering of the text in “The French Academy” is strongly suggestive of Hamlet’s famous soliloquy. “This most excellent canopy, this brave o’erhanging firmament, this majestical roof fritted with golden fire, why it appears to me no other than a foul and pestilent congregation of vapours.” The author has forsaken the common-place rendering of the Apocrypha, and has adopted the same declamatory style which Shakespeare uses. It is strongly reminiscent of Hamlet’s famous speech, Act II., scene ii.

Only one of the Shakespeare commentators makes any reference to the work. The Rev. Joseph Hunter, writing in 1844, points out that the dramatist in “As You Like It,” describing the seven ages of man, follows the division made in the chapter on “The Ages of Man” in the “Academie.”[12]

The suggestion now made is that the French “Academie” was written by Bacon, who is represented in the dialogues as Achitob — the first part when he was about 18 years of age, that he continued it until, in 1618, the complete work was published. In the dedication the author describes himself as a youth of immature experience, but the contents bear evidence of a wide knowledge of classical authors and their works, a close acquaintance with the ancient philosophies, and a store of general information which it would be impossible for any ordinary youth of such an age to possess. But was not the boy who at 15 years of age left Cambridge disagreeing with the teaching there of Aristotle’s philosophy, and whose mental qualities and acquirements provoked as “the

natural ejaculation of the artist's emotion" the significant words, "*Si tabula daretur digna animum mallem*," altogether abnormal?

Was the "French Academie" Bacon's *temporis partus maximus*? It is only in a letter written to Father Fulgentio about 1625 that this work is heard of. Bacon writes: "Equidem memini me, quadraginta abhinc annis, juvenile opusculum circa has res confecisse, quod magna prorsus fiducia et magnifico titulo 'Temporis Partum Maximum' inscripsi."[13]

Spedding says: "This was probably the work of which Henry Cuffe (the great Oxford scholar who was executed in 1601 as one of the chief accomplices in the Earl of Essex's treason) was speaking when he said that 'a fool could not have written it and a wise man would not.' Bacon's intimacy with Essex had begun about thirty-five years before this letter was written."

Forty years from 1625 would carry back to 1585, the year preceding the date of publication of the first edition in English. If Cuffe's remark was intended to apply to the "French Academy," it is just such a criticism as the book might be expected to provoke.

The first edition of "The French Academie" in English appeared in 1586, the second in 1589, the third (two parts) in 1594, the fourth (three parts) in 1602, the fifth in 1614 (all quartos), then, in 1618, the large folio edition containing the fourth part "never before published in English." It appears to have been more popular in England than it was in France. Brunet in his 1838 edition mentions neither the book nor the author, Primaudaye. The question as to whether there was at this time a reading public in England sufficiently wide to absorb an edition in numbers large enough to make the publication of this and similar works possible at a profit will be dealt with hereafter. In anticipation it may be said that the balance of probabilities justifies the conjecture that the issue of each of these editions involved someone in loss, and the folio edition involved considerable loss.

A comparison between the French and English publications points to both having been written by an author who was a master of each language rather than that the latter was a mere translation of the former. The version is so natural in

idiom and style that it appears to be an original rather than a translation. In 1586 how many men were there who could write such English? The marginal notes are in the exact style of Bacon. “A similitude”— “A notable comparison” — occur frequently just as the writer finds them again and again in Bacon’s handwriting in volumes which he possesses. The book abounds in statements, phrases, and quotations which are to be found in Bacon’s letters and works.

One significant fact must be mentioned. The first letter of the text in the dedication in the first English translation is the letter S. It is printed from a wood block (Fig. I.). Thirty-nine years after (in 1625) when the last edition of Bacon’s Essays — and, with the exception of the small pamphlet containing his versification of certain Psalms, the last publication during his life — was printed, that identical wood block (Fig. II.) was again used to print the first letter in the dedication of that book. Every defect and peculiarity in the one will be found in the other. A search through many hundreds of books printed during these thirty-nine years — 1586 to 1625 — has failed to find it used elsewhere, except on one occasion, either then, before, or since.

Fig. I.

The first letter in the text of the dedication of the 1st edition of the English translation of the "French Academie," **1586**. Printed at London by G. Bollifant. The block is also used in a similar manner in the 2nd edition, **1589**. Londini Impensis, John Bishop.

Fig. II.

The first letter in the text of the dedication of the **1625** edition of Bacon's Essays, printed in London, by John Haviland.

Both letters were printed from the same block.

Did Bacon mark his first work on philosophy and his last book by printing the first letter in each from the same block?[14]

Chapter VII. BACON'S FIRST ALLEGORICAL ROMANCE.

There is another work which it is impossible not to associate with this period, and that is John Barclay's "Argenis." It is little better known than is "The French Academy," and yet Cowper pronounced it the most amusing romance ever written. Cardinal Richelieu is said to have been extremely fond of reading it, and to have derived thence many of his political maxims. It is an allegorical novel. It is proposed now only to mention some evidence connected with the "Argenis" which supports the contention that the 1625 English edition contains the original composition, and that its author was young Francis Bacon.

The first edition of the "Argenis" in Latin was published in 1621. The authority to the publisher, Nicholas Buon, to print and sell the "Argenis" is dated the 21st July, 1621, and was signed by Barclay at Rome. The Royal authority is dated on the 31st August following.

Barclay's death took place between these dates, on the 12th of August, at Rome. It is reported that the cause of death was stone, but in an appreciation of him, published by his friend, Ralph Thorie, his death is attributed to poison.

The work is an example of the highest type of Latinity. So impressed was Cowper with its style that he stated that it would not have dishonoured Tacitus himself. A translation in Spanish was published in 1624, and in Italian in 1629. The Latin version was frequently reprinted during the seventeenth and eighteenth centuries — perhaps more frequently than any other book.

In a letter dated 11th May, 1622, Chamberlain, writing to Carleton, says: "The King has ordered Ben Jonson to translate the 'Argenis,' but he will not be able to equal the original." On the 2nd October, 1623, Ben Jonson entered a translation in Stationers' Hall, but it was never published. About that time there was a fire in Jonson's house, in which it is said some manuscripts were destroyed; but it is a pure assumption that the "Argenis" was one of these.

In 1629 an English translation appeared by Sir Robert Le Grys, Knight, and the verses by Thomas May, Esquire. The title-page bears the statement: “The prose upon his Majesty’s command.” There is a Clavis appended, also stated to be “published at his Majesties command.” It was printed by Felix Kyngston for Richard Mughten and Henry Seile. In the address to “The understanding Reader” Le Grys says, “What then should I say? Except it were to entreate thee, that where my English phrase doth not please thee, thou wilt compare it with the originall Latin and mend it. Which I doe not speak as thinking it impossible, but as willing to have it done, for the saving me a labour, who, if his Majesty had not so much hastened the publishing it, would have reformed some things in it, that did not give myselfe very full satisfaction.”

In 1622 King James ordered a translation of the “Argenis.” In 1629[15] Charles I. was so impatient to have a translation that he hastened the publication, thus preventing the translator from revising his work. Three years previously, however, in 1625 — if the date may be relied on — there was published as printed by G. P. for Henry Seile a translation by Kingesmill Long. James died on the 25th March, 1625. The “Argenis” may not have been published in his lifetime; but if the date be correct, three or four years before Charles hastened the publication of Le Grys’s translation, this far superior one with Kingesmill Long’s name attached to it could have been obtained from H. Seile. Surely the publisher would have satisfied the King’s impatience by supplying him with a copy of the 1625 edition had it been on sale. The publication of a translation of the “Argenis” must have attracted attention. Is it possible that it could have been in existence and not brought to the notice of the King? There is something here that requires explanation. The Epistle Dedicatorie of the 1625 edition is written in the familiar style of another pen, although it bears the name of Kingesmill Long. The title-page states that it is “faithfully translated out of Latine into English,” but it is not directly in the Epistle Dedicatorie spoken of as a translation. The following extract implies that the work had been lying for years waiting publication: —

"This rude piece, such as it is, hath long lyen by me, since it was finished; I not thinking it worthy to see the light. I had always a desire and hope to have it undertaken by a more able workman, that our Nation might not be deprived of the use of so excellent a Story: But finding none in so long time to have done it; and knowing that it spake not *English*, though it were a rich jewell to the learned Linguist, yet it was close lockt from all those, to whom education had not given more languages, than Nature Tongues: I have adventured to become the key to this piece of hidden Treasure, and have suffered myselfe to be overruled by some of my worthy friends, whose judgements I have alwayes esteemed, sending it abroad (though coursely done) for the delight and use of others."

Not a word about the author! The translations, said to be by Thomas May, of the Latin verses in the 1629 are identical with those in the 1625 edition, although Kingesmill Long, on the title-page, appears as the translator. Nothing can be learnt as to who or what Long was.

Over lines "Authori," signed Ovv: Fell:[16] in the 1625 edition is one of the well-known light and dark A devices. This work is written in flowing and majestic English; the 1629 edition in the cramped style of translation.

The copy bearing date 1628, to which reference has been made, belonged to John Henry Shorthouse. He has made this note on the front page: "Jno. Barclay's description of himself under the person of Nicopompus Argenis, p. 60." This is the description to which he alludes: —

"Him thus boldly talking, Nicopompus could no longer endure: he was a man who from his infancy loved Learning; but who disdaining to be nothing but a booke-man had left the schooles very young, that in the courts of Kings and Princes, he might serve his apprenticeship in publicke affairs; so he grew there with an equall abilitie, both in learning and imployment, his descent and disposition fitting him for that kind of life: wel esteemed of many Princes, and especially of Meleander, whose cause together with the rest of the Princes, he had taken upon him to defend."

This description is inaccurate as applied to John Barclay, but in every detail it describes Francis Bacon.

A comparison has been made between the editions of 1625 and 1629 with the 1621 Latin edition. It leaves little room for doubting that the 1625 is the original work. Throughout the Latin appears to follow it rather than to be the leader; whilst the 1629 edition follows the Latin closely. In some cases the word used in the 1625 edition has been incorrectly translated into the 1621 edition, and the Latin word re-translated literally and incorrectly in view of the sense in the 1629 edition. But space forbids this comparison being further followed; suffice it to say that everything points to the 1625 edition being the original work.

As to the date of composition much may be said; but the present contention is that “The French Academie,” “The Argenis,” and “Love’s Labour’s Lost” are productions from the same pen, and that they all represent the work of Francis Bacon probably between the years 1577 and 1580. At any rate, the first-named was written whilst he was in France, and the others were founded on the incidents and experience obtained during his sojourn there.

Chapter VIII. BACON IN FRANCE, 1576-1579.

This brilliant young scholar landed with Sir Amias Paulet at Calais on the 25th of September, 1576, and with him went straight to the Court of Henry III. of France. It is remarkable that neither Montagu, Spedding, Hepworth Dixon, nor any other biographer seems to have thought it worth while to consider under what influences he was brought when he arrived there at the most impressionable period of his life. Hepworth Dixon, without stating his authority, says that he "quits the galleries of the Louvre and St. Cloud with his morals pure," but nothing more. And yet Francis Bacon arrived in France at the most momentous epoch in the history of French literature. This boy, with his marvellous intellect — the same intellect which nearly half a century later produced the "Novum Organum" — with a memory saturated with the records of antiquity and with the writings of the classical authors, with an industry beyond the capacity and a mind beyond the reach of his contemporaries, skilled in the teachings of the philosophers, with independence of thought and a courage which enabled him to condemn the methods of study followed at the University where he had spent three years; this boy who had a "beam of knowledge derived from God" upon him, who "had not his knowledge from books, but from some grounds and notions from himself," and above and beyond all who was conscious of his powers and had unbounded confidence in his capacity for using them; this boy walked beside the English Ambassador elect into the highest circles of French Society at the time when the most important factors of influence were Ronsard and his confrères of the Pléiade. He had left behind him in his native country a language crude and almost barbaric, incapable of giving expression to the knowledge which he possessed and the thoughts which resulted therefrom.

At this time there were few books written in the English tongue which could make any pretence to be considered literature: Sir Thomas Eliot's "The Governor," Robert Ascham's "The Schoolmaster," and Thomas Wright's "Arts

of Rhetoric," almost exhaust the list. Thynne's edition, 1532, and Lidgate's edition, 1561, of Chaucer's works are not intelligible. Only in the 1598 edition can the great poet be read with any understanding. The work of re-casting the poems for this edition was Bacon's, and he is the man referred to in the following lines, which are prefixed to it: — *The Reader to Geffrey Chaucer.*

Rea. — Where hast thou dwelt, good Geffrey al this while,
Unknown to us save only by thy bookes?

Chau. — In haulks, and hernes, God wot, and in exile,
Where none vouchsaft to yeeld me words or lookes:
Till one which saw me there, and knew my friends,
Did bring me forth: such grace sometimes God sends.

Rea. — But who is he that hath thy books repar'd,
And added moe, whereby thou are more graced?

Chau. The selfe same man who hath no labor spar'd,
—
To helpe what time and writers had defaced:
And made old words, which were unknoun of many,
So plaine, that now they may be knoun of any.

Rea. Well fare his heart: I love him for thy sake,
—
Who for thy sake hath taken all this pains.

Chau. Would God I knew some means amends to
— make,
That for his toile he might receive some gains.
But wot ye what? I know his kindnesse such,
That for my good he thinks no pains too much:
And more than that; if he had knoune in time,
He would have left no fault in prose nor rime.

There is a catalogue of the library of Sir Thomas Smith[17] on August 1, 1566, in his gallery at Hillhall. It was said to contain nearly a thousand books. Of these only five were written in the English language. Under Theologici, K. Henry VIII. book; under Juris Civilis, Littleton's Tenures, an old abridgement of Statutes; under Historiographi, Hall's Chronicles, and Fabian's Chronicles and The Decades of P. Martyr; under Mathematica, The Art of Navigation. The remainder are in Greek, Latin, French, and Italian. Burghley's biographer states that Burghley "never read any books or praiers but in Latin, French, or Italian, very seldom in Englishe."

At this time Francis Bacon thought in Latin, for his mother tongue was wholly insufficient. There is abundant proof of this in his own handwriting. Under existing conditions there could be no English literature worthy of the name. If a Gentleman of the Court wrote he either suppressed his writings or suffered them to be published without his name to them, as it was a discredit for a gentleman to seem learned and to show himself amorous of any good art. Here is where Spedding missed his way and never recovered himself. Deep as is the debt of gratitude due to him for his devoted labours in the preparation of "Bacon's Life and Letters" and in the edition of his works, it must be asserted that he accomplished this work without seeing Francis Bacon. There was a vista before young Bacon's eyes from which the practice of the law and civil dignities were absent. He arrived at the French Court at the psychological moment when an object-lesson met his eyes which had a more far-reaching effect on the language and literature of the Anglo-Saxon race than any or all other influences that have conspired to raise them to the proud position which to-day they occupy. It is necessary briefly to explain the position of the French language and literature at this juncture.

The French Renaissance of literature had its beginning in the early years of the sixteenth century. It had been preceded by that of Italy, which opened in the fourteenth century, and reached its limit with Ariosto and Tasso, Macchiavelli and Guicciardini during the sixteenth century. Towards the end of the fifteenth

century modern French poetry may be said to have had its origin in Villon and French prose in Comines. The style of the former was artificial and his poems abounded in recurrent rhymes and refrains. The latter had peculiarities of diction which were only compensated for by weight of thought and simplicity of expression. Clement Marot, who followed, stands out as one of the first landmarks in the French Renaissance. His graceful style, free from stiffness and monotony, earned for him a popularity which even the brilliancy of the Pléiade did not extinguish, for he continued to be read with genuine admiration for nearly two centuries. He was the founder of a school of which Mellia de St. Gelais, the introducer of the sonnet into France, was the most important member. Rabelais and his followers concurrently effected a complete revolution in fiction. Marguerite of Navarre, who is principally known as the author of "The Heptameron," maintained a literary Court in which the most celebrated men of the time held high place. It was not until the middle of the sixteenth century that the great movement took place in French literature which, if that which occurred in the same country three hundred years subsequently be excepted, is without parallel in literary history.

The Pléiade consisted of a group of seven men and boys who, animated by a sincere and intelligent love of their native language, banded themselves together to remodel it and its literary forms on the methods of the two great classical tongues, and to reinforce it with new words from them. They were not actuated by any desire for gain. In 1549 Jean Daurat, then 49 years of age, was professor of Greek at le Collège de Coqueret in Paris. Amongst those who attended his classes were five enthusiastic, ambitious youths whose ages varied from seventeen to twenty-four. They were Pierre de Ronsard, Joachim du Bellay, Remy Belleau, Antoine de Baïf, and Etienne Jodelle. They and their Professor associated themselves together and received as a colleague Pontus de Tyard, who was twenty-eight. They formed a band of seven renovators, to whom their countrymen applied the cognomen of the Pléiade, by which they will ever be known. Realising the defects and possibilities of their language, they recognised that by appropriations from the Greek and Latin languages, and from the

melodious forms of the Italian poetry, they might reform its defects and develop its possibilities so completely that they could place at the service of great writers a vehicle for expression which would be the peer if not the superior of any language, classical or modern. It was a bold project for young men, some of whom were not out of their teens, to venture on. That they met with great success is beyond question; the extent of that success it is not necessary to discuss here. The main point to be emphasised is that it was a deliberate scheme, originated, directed, and matured by a group of little more than boys. The French Renaissance was not the result of a spontaneous bursting out on all sides of genius. It was wrought out with sheer hard work, entailing the mastering of foreign languages, and accompanied by devotion and without hope of pecuniary gain. The manifesto of the young band was written by Joachim de Bellay in 1549, and was entitled, "La Défense et Illustration de la langue Francaise." In the following year appeared Ronsard's Ode — the first example of the new method. Pierre de Ronsard entered Court life when ten years old. In attendance on French Ambassadors he visited Scotland and England, where he remained for some time. A severe illness resulted in permanent deafness and compelled him to abandon his profession, when he turned to literature. Although Du Bellay was the originator of the scheme, Ronsard became the director and the acknowledged leader of the band. His accomplishments place him in the first rank of the poets of the world. Reference would be out of place here to the movement which was after his death directed by Malherbe against Ronsard's reputation and fame as a poet and his eventual restoration by the disciples of Sainte Beuve and the followers of Hugo. It is desirable, however, to allude to other great Frenchmen whose labours contributed in other directions to promote the growth of French literature. Jean Calvin, a native of Noyon, in Picardy, had published in Latin, in 1536, when only twenty-seven years of age, his greatest work, both from a literary and theological point of view, "The Institution of the Christian Religion," which would be accepted as the product of full maturity of intellect rather than the firstfruits of the career of a youth. What the Pléiade had done to create a French language adequate for the highest expression of poetry Calvin

did to enable facility in argument and discussion. A Latin scholar of the highest order, avoiding in his compositions a tendency to declamation, he developed a stateliness of phrase which was marked by clearness and simplicity. Théodore Beza, historian, translator, and dramatist, was another contributor to the literature of this period. Jacques Amyot had commenced his translations from "Ethiopica," treating of the royal and chaste loves of Theagenes and Chariclea three years before Du Bellay's manifesto appeared. Montaigne, referring to his translation of Plutarch, accorded to him the palm over all French writers, not only for the simplicity and purity of his vocabulary, in which he surpassed all others, but for his industry and depth of learning. In another field Michel Eyquem Sieur de Montaigne had arisen. His moral essays found a counterpart in the biographical essays of the Abbé de Brantôme. Agrippa D'Aubigné, prose writer, historian, and poet; Guillaume de Saluste du Bartas, the Protestant Ronsard whose works were more largely translated into English than those of any other French writer; Philippes Desportes and others might be mentioned as forming part of that brilliant circle of writers who had during a comparatively short period helped to achieve such a high position for the language and literature of France.

In 1576, when Francis Bacon arrived in France, the fame of the Pléiade was at its zenith. Du Bellay and Jodelle were dead, but the fruit of their labours and of those of their colleagues was evoking the admiration of their countrymen. The popularity of Ronsard, the prince of poets and the poet of princes, was without precedent. It is said that the King had placed beside his throne a state chair for Ronsard to occupy. Poets and men of letters were held in high esteem by their countrymen. In England, for a gentleman to be amorous of any learned art was held to be discreditable, and any proclivities in this direction had to be hidden under assumed names or the names of others. In France it was held to be discreditable for a gentleman not to be amorous of the learned arts. The young men of the Pléiade were all of good family, and all came from cultured homes. Marguerite of Navarre had set the example of attracting poets and writers to her

Court and according honours to them on account of their achievements. The kings of France had adopted a similar attitude. During the same period in England Henry VIII., Mary, and Elizabeth had been following other courses. They had given no encouragement to the pursuit of literature. Notwithstanding the repetition by historians of the assertion that the good Queen Bess was a munificent patron of men of letters, literature flourished in her reign in spite of her action and not by its aid.

Bacon implies this in the opening sentences of the second book of the "Advancement of Learning." He speaks of Queen Elizabeth as being "a sojourner in the world in respect of her unmarried life, rather than an inhabitant. She hath indeed adorned her own time and many waies enricht it; but in truth to Your Majesty, whom God hath blest with so much Royall issue worthy to perpetuate you for ever; whose youthfull and fruitfull Bed, doth yet promise more children; it is very proper, not only to iradiate as you doe your own times, but also to extend your Cares to those Acts which succeeding Ages may cherish, and Eternity itself behold: Amongst which, if my affection to learning doe not transport me, there is none more worthy, or more noble, than the endowment of the world with sound and fruitfull Advancement of Learning: For why should we erect unto ourselves some few authors, to stand like Hercules Columnes beyond which there should be no discovery of knowledge, seeing we have your Majesty as a bright and benigne starre to conduct and prosper us in this Navigation." As Elizabeth had been unfruitful in her body, and James fruitful, so had she been unfruitful in encouraging the Advancement of Learning, but the appeal is made to James that he, being blessed with a considerable issue, should also have an issue by the endowment of Learning.

What must have been the effect on the mind of this brilliant young Englishman, Francis Bacon, when he entered into this literary atmosphere so different from that of the Court which he had left behind him? There was hardly a classical writer whose works he had not read and re-read. He was familiar with the teachings of the schoolmen; imbued with a deep religious spirit, he had mastered the principles of their faiths and the subtleties of their disputations. The

intricacies of the known systems of philosophies had been laid bare before his penetrating intellect. With the mysteries of mathematics and numbers he was familiar. What had been discovered in astronomy, alchemy and astrology he had absorbed; however technical might be a subject, he had mastered its details. In architecture the works of Vitruvius had been not merely read but criticised with the skill of an expert. Medicine, surgery — every subject — he had made himself master of. In fact, when he asserted that he had taken all knowledge to be his province he spoke advisedly and with a basis of truth which has never until now been recognised. The youth of 17 who possessed the intellect, the brain and the memory which jointly produced the "Novum Organum," whose mind was so abnormal that the artist painting his portrait was impelled to place round it "the significant words," "*si tabula daretur digna, animum mallem*," who had taken all knowledge to be his province, was capable of any achievement of the Admirable Crichton. And this youth it was who in 1576 passed from a country of literary and intellectual torpor into the brilliancy of the companionship of Pierre de Ronsard and his associates. It is one of the most stupendous factors in his life. Something happened to him before his return to England which affected the whole of his future life. It may be considered a wild assertion to make, but the time will come when its truth will be proved, that "The Anatomie of the Minde," "Beautiful Blossoms," and "The French Academy," are the product of one mind, and that same mind produced the "Arte of English Poesie," "An Apology for Poetrie," by Sir John Harrington, and "The Defense of Poetry," by Sir Philip Sydney. The former three were written before 1578 and place the philosopher before the poet; the latter three were written after 1580 and place the poet — the creator — before the philosopher. Francis Bacon had recognised that the highest achievement was the act of creation. Henceforth he lived to create.

Sir Nicholas Bacon died on or about the 17th of February, 1578-9. How or where this news reached Francis is not recorded, but on the 20th of the following March he left Paris for England, after a stay of two and a-half years on the Continent. He brought with him to the Queen a despatch from Sir Amias Paulet,

in which he was spoken of as being “of great hope, endued with many and singular parts,” and one who, “if God gave him life, would prove a very able and sufficient subject to do her Highness good and acceptable service.”[18]

Chapter IX. BACON'S SUIT ON HIS RETURN TO ENGLAND, 1580.

Spedding states that the earliest composition of Bacon which he had been able to discover is a letter written in his 20th year from Grays Inn. From that time forward, he continues, compositions succeed each other without any considerable interval, and in following them we shall accompany him step by step through his life. What are the compositions which Spedding places as being written but not published up to the year 1597, when the first small volume of 10 essays containing less than 6,000 words was issued from the press? These are they: —

Notes on the State of Christendom[19] (date 1580 to 1584).

Letter of Advice to the Queen (1584-1586).

An Advertisement touching the Controversies of the Church of England (1586-1589).

Speeches written for some Court device, namely, Mr. Bacon in praise of Knowledge, and Mr. Bacon's discourse in praise of his Sovereign (1590-1592).

Certain observations made upon a libel published this present year, 1592.

A true report of the Detestable Treason intended by Dr. Roderigo Lopez, 1594.

Gesta Grayorum, 1594, parts of which are printed by Spedding in type denoting doubtful authorship.

Bacon's device, 1594-1598.

Three letters to the Earl of Rutland on his travels, 1595-1596.

That is all! These are the compositions which follow each other without considerable interval, and by which we are to accompany him step by step through those seventeen years which should be the most important years in a man's life! He could have turned them out in ten days or a fortnight with ease. We expect from Mr. Spedding bread, and he gives us a stone!

This brilliant young man, who, when 15 years of age, left Cambridge, having possessed himself of all the knowledge it could afford to a student, who had travelled in France, Spain and Italy to "polish his mind and mould his opinion by intercourse with all kinds of foreigners," how was he occupying himself during what should be the most fruitful years of his life? Following his profession at the Bar? His affections did not that way tend. Spedding expresses the opinion that he had a distaste for his profession, and, writing of the circumstances with which he was surrounded in 1592, says: "I do not find that he was getting into practice. His main object still was to find ways and means for prosecuting his great philosophical enterprise." What was this enterprise? "I confess that I have as vast contemplative ends as I have moderate means," he says, writing to Burghley, "for I have taken all knowledge to be my province." This means more than mere academic philosophy.

In 1593, when Bacon was put forward and upheld for a year as a candidate for the post of Attorney-General, Spedding writes of him; "He had had little or no practice in the Courts; what proof he had given of professional proficiency was confined to his readings and exercises in Grays Inn.... Law, far from being his only, was not even his favourite study; ... his head was full of ideas so new and large that to most about him they must have seemed visionary."

Writing of him in 1594 Spedding says: "The strongest point against Bacon's pretensions for the Attorneyship was his want of practice. His opponents said that 'he had never entered the place of battle.'[20] Whether this was because he could not find clients or did not seek them I cannot say." In order to meet the objection, Bacon on the 25th January, 1593-4, made his first pleading, and Burghley sent his secretary "to congratulate unto him the first fruits of his public practice."

There is one other misconception to be corrected. It is urged that Bacon was, during this period, engrossed in Parliamentary life. From 1584 to 1597 five Parliaments were summoned. Bacon sat in each. In his twenty-fifth year he was elected member for Melcombe, in Dorsetshire. In the Parliament of 1586 he sat

for Taunton, in that of 1588 for Liverpool, in that of 1592-3 for Middlesex, and in 1597 for Ipswich.

But the sittings of these Parliaments were not of long duration, and the speeches which he delivered and the meetings of committees upon which he was appointed would absorb but a small portion of his time. It must be patent, therefore, that Spedding does not account for his occupations from his return to England in 1578 until 1597, when the first small volume of his Essays was published.

During the whole of this period Bacon was in monetary difficulties, and yet there is no evidence that he was living a life of dissipation or even of extravagance. On the contrary, all testimony would point to the conclusion that he was following the path of a strictly moral and studious young man. On his return to England he took lodgings in Coney Court, Grays Inn. There Anthony found him when he returned from abroad.

There are no data upon which to form any reliable opinion as to the amount of his income at this time. Rawley states that Sir Nicholas Bacon had collected a considerable sum of money which he had separated with intention to have made a competent purchase of land for the livelihood of his youngest son, but the purchase being unaccomplished at his death, Francis received only a fifth portion of the money dividable, by which means he lived in some straits and necessities in his younger years. It is not clear whether the "money dividable" was only that separated by Sir Nicholas, or whether he left other sums which went to augment the fund divisible amongst the brothers. His other children were well provided for. Francis was not, however, without income. Sir Nicholas had left certain manors, etc., in Herts to his sons Anthony and Francis in tail male, remainder to himself and his heirs. Lady Ann Bacon had vested an estate called Markes, in Essex, in Francis, and there is a letter, dated 16th April, 1593, from Anthony to his mother urging her to concur in its sale, so that the proceeds might be applied to the relief of his brother's financial position.[21]

Lady Bacon lived at Gorhambury. She was not extravagant, and yet in 1589 she was so impoverished that Captain Allen, in writing to Anthony, speaking of

his mother, Lady Bacon, says she "also saith her jewels be spent for you, and that she borrowed the last money of seven several persons." Whatever her resources were, they had by then been exhausted for her sons. Anthony was apparently a man of considerable means. He was master of the manor and priory of Redburn, of the manor of Abbotsbury, Minchinbury and Hores, in the parish of Barley, in the county of Hertford; of the Brightfirth wood, Merydan-meads, and Pinner-Stoke farms, in the county of Middlesex.[22]

But within a few years after his return to England Anthony was borrowing money wherever he could. Mother and brother appear to have exhausted their resources and their borrowing capabilities. There is an account showing that in eighteen months, about 1593, Anthony lent Francis £373, equivalent to nearly £3,000 at to-day's value. In 1597 Francis was arrested by the sheriff for a debt of £300, for which a money-lender had obtained judgment against him, and he was cast into the Tower. Where had all the money gone? There is no adequate explanation.

The first letter of Francis Bacon's which Spedding met with, to which reference has already been made, is dated 11th July, 1580, to Mr. Doylie, and is of little importance. The six letters which follow — all there are between 1580 and 1590[23] — relate to one subject, and are of great significance. The first is dated from Grays Inn, 16th September, 1580, to Lady Burghley. In it young Francis, now 19 years of age, makes this request: "That it would please your Ladyship in your letters wherewith you visit my good Lord to vouchsafe the mention and recommendation of my suit; wherein your Ladyship shall bind me more unto you than I can look ever to be able to sufficiently acknowledge."

The next letter — written on the same day — is addressed to Lord Burghley. Its object is thus set forth: —

"My letter hath no further errand but to commend unto your Lordship the remembrance of my suit which then I moved unto you, whereof it also pleased your Lordship to give me good hearing so far forth as to promise to tender it unto her Majesty, and withal to add in the behalf of it that which I may better

deliver by letter than by speech, which is, that although it must be confessed that the request is rare and unaccustomed, yet if it be observed how few there be which fall in with the study of the common laws either being well left or friended, or at their own free election, or forsaking likely success in other studies of more delight and no less preferment, or setting hand thereunto early without waste of years upon such survey made, it may be my case may not seem ordinary, no more than my suit, and so more beseeming unto it. As I force myself to say this in excuse of my motion, lest it should appear unto your Lordship altogether undiscreet and unadvised, so my hope to obtain it resteth only upon your Lordship's good affection towards me and grace with her Majesty, who methinks needeth never to call for the experience of the thing, where she hath so great and so good of the person which recommendeth it."

What was this suit? Spedding cannot suggest any explanation. He says: "What the particular employment was for which he hoped I cannot say; something probably connected with the service of the Crown, to which the memory of his father, an old and valued servant prematurely lost, his near relationship to the Lord Treasurer, and the personal notice which he had himself received from the Queen, would naturally lead him to look.... The proposition, whatever it was, having been explained to Burghley in conversation, is only alluded to in these letters. It seems to have been so far out of the common way as to require an apology, and the terms of the apology imply that it was for some employment as a lawyer. And this is all the light I can throw upon it." Subsequently Spedding says the motion was one[24] "which would in some way have made it unnecessary for him to follow 'a course of practice,' meaning, I presume, ordinary practice at the Bar."

Another expression in the letter makes it clear that the object of the suit was an experiment. The Queen could not have "experience of the thing," and Bacon solicited Burghley's recommendation, because she would not need the experience if he, so great and so good, vouched for it.

Burghley appears to have tendered the suit to the Queen, for there is a letter dated 18th October, 1580, addressed to him by Bacon, commencing:

"Your Lordship's comfortable relation to her Majesty's gracious opinion and meaning towards me, though at that time your leisure gave me not leave to show how I was affected therewith, yet upon every representation thereof it entereth and striketh so much more deeply into me, as both my nature and duty presseth me to return some speech of thankfulness."

Spedding remarks thereon: "It seems that he had spoken to Burghley on the subject and made some overture, which Burghley undertook to recommend to the Queen; and that the Queen, who though slow to bestow favours was careful always to encourage hopes, entertained the motion graciously and returned a favourable answer. The proposition, whatever it was, having been explained to Burghley in conversation, is only alluded to in these letters."

Spedding dismisses these three letters in 22 lines of comment, which contain the extracts before set out. He regards the matter as of slight consequence, and admits that he can throw no light upon it. But he points out that it was "so far out of the common way as to require an apology." Surely he has not well weighed the terms of the apology when he says they "imply that it was for some employment as a lawyer."

There had been a conversation between Bacon and Burghley during which Bacon had submitted a project to the accomplishment of which he was prepared to devote his life in the Queen's service. It necessitated his abandoning the profession of the law. Apparently Burghley had remonstrated with him, in the manner of experienced men of the world, against forsaking a certain road and avenue to preferment in favour of any course rare and unaccustomed. Referring in his letter to this, Bacon's parenthetical clause beginning "either being well left or friended," etc., is confession and avoidance. In effect he says: — Few study the common laws who have influence; few at their own free election; few desert studies of more delight and no less preferment; and few devote themselves to that study from their earliest years. Since there are few who, having my opportunities, devote themselves to the study of the common laws, my position

in so doing would not be an ordinary one, no more than is my suit. Therefore, why should I, having your [Burleigh's] influence to help me, sacrifice my great intellectual capabilities fitting me to accomplish my great contemplative ends? Why should I sacrifice them to a study of the common laws?

The sentence may be otherwise construed, but in any case it involves an apology for the abandonment of the profession which had been chosen for him.

The next letter is addressed to the Right Honourable Sir Francis Walsingham, principal secretary to her Majesty, and is dated from Grays Inn, 25th of August, 1585. Spedding's comment on it is as follows: —

"For all this time, it seems, the suit (whatever it was) which he had made to her through Burghley in 1580 remained in suspense, neither granted nor denied, and the uncertainty prevented him from settling his course of life. From the following letter to Walsingham we may gather two things more concerning it: it was something which had been objected to as unfit for so young a man; and which would in some way have made it unnecessary for him to follow 'a course of practice' — meaning, I presume, ordinary practice at the Bar."

This is the letter: —

"It may please your Honour to give me leave amidst your great and diverse business to put you in remembrance of my poor suit, leaving the time unto your Honour's best opportunity and commodity. I think the objection of my years will wear away with the length of my suit. The very stay doth in this respect concern me, because I am thereby hindered to take a course of practice which, by the leave of God, if her Majesty like not my suit, I must and will follow: not for any necessity of estate, but for my credit sake, which I know by living out of action will wear. I spake when the Court was at Theball's to Mr. Vice-Chamberlain,[25] who promised me his furderance; which I did lest he mought be made for some other. If it may please your Honour, who as I hear hath great interest in him, to speak with him in it, I think he will be fast mine."

Spedding remarks: "This is the last we hear of this suit, the nature and fate of which must both be left to conjecture. With regard to its fate, my own conjecture is that he presently gave up all hope of success in it, and tried instead to obtain

through his interest at Court some furtherance in the direct line of his profession."

He adds: "The solid grounds on which Bacon's pretensions rested had not yet been made manifest to the apprehension of Bench and Bar; his mind was full of matters with which they could have no sympathy, and the shy and studious habits which we have seen so offend Mr. Faunt would naturally be misconstrued in the same way by many others."[26]

This passage refers to a letter to Burghley dated the 6th of the following May, *i.e.*, 1586, from which it will be seen that the last had not been heard of the motion. Burghley had been remonstrating with Bacon as to reports which had come to him of his nephew's proceedings. Bacon writes: —

"I take it as an undoubted sign of your Lordship's favour unto me that being hardly informed of me you took occasion rather of good advice than of evil opinion thereby. And if your Lordship had grounded only upon the said information of theirs, I mought and would truly have upholden that few of the matters were justly objected; as the very circumstances do induce in that they were delivered by men that did misaffect me and besides were to give colour to their own doings. But because your Lordship did mingle therewith both a late motion of mine own and somewhat which you had otherwise heard, I know it to be my duty (and so do I stand affected) rather to prove your Lordship's admonition effectual in my doings hereafter than causeless by excusing what is past. And yet (with your Lordship's pardon humbly asked) it may please you to remember that I did endeavour to set forth that said motion in such sort as it mought breed no harder effect than a denial, and I protest simply before God that I sought therein an ease in coming within Bars, and not any extraordinary and singular note of favour."

May not the interpretation of the phrase "I sought therein an ease in coming within Bars" be "I sought in that motion a freedom from the burden (or necessity) of coming within Bars." The phrase "an ease in" is very unusual, and unless it was a term used in connection with the Inns it is difficult to see its

precise meaning. In other words, he sought an alternative method to provide means for carrying out his great philosophical enterprise.

There is an interval of five years before the next and last letter of the six was written. It is undated, but an observation in it shows that it was written when he was about 31 years of age, thus fixing the date at 1591.

From an entry in Burghley's note book,[27] dated 29 October, 1589, it appears that in the meantime a grant had been made to Bacon of the reversion of the office of Clerk to the Counsel in the Star Chamber. This was worth about £1,600 per annum and executed by deputy, but the reversion did not fall in for twenty years, so it did not affect the immediate difficulty in ways and means.

There are occasional references to Francis in Anthony's correspondence which show that the brothers were residing at Grays Inn, but nothing is stated as to the occupation of the younger brother.

At this time, according to Spedding,[28] who, however, does not give his authority, Francis had a lodge at Twickenham. Many of his letters are subsequently addressed from it, and three years later he was keeping a staff of scriveners there.

The last letter is addressed to Lord Burghley, who is in it described by Bacon as "the second founder of my poor estate," and contains the following: —

"I cannot accuse myself that I am either prodigal or slothful, yet my health is not to spend nor my course to get. Lastly, I confess that I have as vast contemplative ends as I have moderate civil ends: for I have taken all knowledge to be my province. This whether it be curiosity or vain glory, or (if one takes it favourably) *philanthropia*, is so fixed in my mind as it cannot be removed. And I do easily see, that place of any reasonable countenance doth bring commandment of more wits than of a man's own, which is the thing I greatly affect. And for your Lordship, perhaps you shall not find more strength and less encounter in any other. And if your Lordship shall find now, or at any time, that I do seek or affect any place, whereunto any that is nearer to your Lordship shall be concurrent, say then that I am a most dishonest man. And if your Lordship will not carry me on, I will not do as Anaxagoras did, who reduced himself with

contemplation unto voluntary poverty; but this I will do, I will sell the inheritance that I have, and purchase some lease of quick revenue, or some office of gain that shall be executed by deputy, and so give over all care of service and become some sorry bookmaker, or a true pioneer in that mine of truth, which he said lay so deep. This which I have writ to your Lordship is rather thoughts than words, being set down without all art, disguising or reservation."

The suit has been of no avail. Once more Bacon appeals (and this is to be his final appeal) to his uncle. He is writing thoughts rather than words, set down without art, disguising or reservation. But if his Lordship will not carry him along he has definitely decided on his course of action. The law is not now even referred to. If the object of the suit was not stated in 1580, there cannot be much doubt now but that it had to do with the making of books and pioneer work in the mine of truth. For ten years Francis Bacon had waited, buoyed up by encouragements and false hopes. Now he decides to take his fortune into his own hands and rely no more on assistance either from the Queen or Burghley.

One sentence in the letter should be noted: "If your Lordship shall find now, or at any time, that I do seek or affect any place whereunto any that is nearer unto your Lordship shall be concurrent, say then that I am a most dishonest man." Surely this was an assurance on Bacon's part that he did not seek or affect to stand in the way of the one — the only one, Robert Cecil — who stood nearer to Burghley in kinship.

It therefore appears evident from the foregoing facts: —

(1) That Francis Bacon at 17 years of age was an accomplished scholar; that his knowledge was abnormally great, and that his wit, memory, and mental qualities were of the highest order — probably without parallel.

(2) That in the year 1580, when 19 years old, he sought the assistance of Burghley to induce the Queen to supply him with means and the opportunity to carry out some great work upon the achievement of which he had set his heart. The work was without precedent, and in carrying it out he was prepared to dedicate to her Majesty the use and spending of his life.

(3) That for ten years he waited and hoped for the granting of his suit, which was rare and unaccustomed, until eventually he was compelled to relinquish it and rely upon his own resources to effect his object.

(4) But he desired to command other wits than his own, and that could be more easily achieved by one holding place of any reasonable countenance. He therefore sought through Burleigh place accompanied by income, so that he might be enabled to achieve the vast contemplative ends he had in view.

(5) That during the years 1580 to 1597, in which he claims that he was not slothful, there is no evidence of his being occupied in his profession or in State affairs to any appreciable extent, and yet there do not exist any acknowledged works as the result of his labours. Rawley states that Bacon would "suffer no moment of time to slip from him without some present improvement."

(6) He received pecuniary assistance from his uncle, Lord Burghley. He strained the monetary resources of his mother and brother, which were not inconsiderable, to the utmost, exhausted his own, and heavily encumbered himself with debts, and yet he was not prodigal or extravagant.

(7) Money and time he must have to carry out his scheme, which, if one takes it favourably, might be termed philanthropia, and he therefore decided that, failing obtaining some sinecure office, he would sell the inheritance he had, purchase some lease of quick revenue or office of gain that could be executed by a deputy, give over all care of serving the State, and become some sorry bookmaker or a true pioneer in the mine of truth.

(8) Spedding says, "He could at once imagine like a poet and execute like a clerk of the works"; but whatever his contemplative ends were there is nothing known to his biographers which reveals the result of his labours as clerk of the works.

(9) If he carried out the course of action which he contemplated it is clear that he decided to do so without himself appearing as its author and director. From 1580 to 1590 something more was on his mind than the works he published after he had arrived at sixty years of age. "I am no vain promiser," he said. Where can the fulfilment of his promise be found? Can his course be followed by tracing

through the period the trail which was left by some great and powerful mind directing the progress of the English Renaissance?

Chapter X. THE RARE AND UNACCUSTOMED SUIT.

What was this rare and unaccustomed suit of which the Queen could have had no experience and which, according to Spedding, would make it unnecessary for Bacon to follow “ordinary practice at the bar”? Historians and biographers have founded on this suit the allegation that from his earliest years Bacon was a place hunter, entirely ignoring the fact, which is made clear from the letter to Walsingham written four years after the application was first made, that he had resolved on a course of action which, if her Majesty liked not his suit, by the leave of God he must and would follow, not for any necessity of estate, but for his credit sake. Here was a young man of twenty years of age, earnestly urging the adoption of a scheme which he had conceived, and which he feared Burghley might consider indiscreet and unadvised. Failing in obtaining his object, as will be proved by definite evidence, undertaking at the cost of Thomas Bodley and other friends a course of travel to better fit him for the task he had mapped out as his life’s work — returning to England and, four years after his first request had been made, renewing his suit — grimly in earnest and determined to carry the scheme through at all costs, with or without the Queen’s aid. This is not the conduct of a mere place hunter. If these letters be read aright and the reasonable theory which will be advanced of the nature of the suit be accepted — all efforts to suggest any explanation having hitherto, as Spedding admits, proved futile — a fresh light will be thrown upon the character of Francis Bacon, and the heavy obligation under which he has placed his countrymen for all ages will for the first time be recognised.

In the seven volumes of “Bacon’s Life and Letters” there is nothing to justify the eulogy on his character to which Spedding gave utterance in the following words:— “But in him the gift of seeing in prophetic vision what might be and ought to be was united with the practical talent of devising means and handling minute details. He could at once imagine like a poet and execute like a clerk of

the works. Upon the conviction *This must be done* followed at once *How* may it be done? Upon that question answered followed the resolution to try and do it." But although Spedding fails to produce any evidence to justify his statement, it is nevertheless correct. More than that, the actual achievement followed with unerring certainty, but Spedding restricts Bacon's life's work to the establishment of a system of inductive philosophy, and records the failure of the system.

William Cecil was a man of considerable classical attainments, although these were probably not superior to those of Mildred Cooke, the lady who became his second wife. He was initiated into the methods of statesmanship at an early age by his father, Richard Cecil, Master of the Robes to Henry VIII. Having found favour with Somerset, the Protector of Edward VI., he was, when 27 years of age, made Master of Requests. When Somerset fell from power in 1549 young Cecil, with other adherents of the Protector, was committed to the Tower. But he was soon released and was rapidly advanced by Northumberland. He became Secretary of State, was knighted and made a member of the Privy Council. Mary would have continued his employment in office had he not refused her offers on account of his adhesion to the Protestant faith. He mingled during her reign with men of all parties and his moderation and cautious conduct carried him through that period without mishap. On Elizabeth's accession he was the first member sworn upon the Privy Council, and he continued during the remainder of his life her principal Minister of State. Sagacious, deliberate in thought and character, tolerant, a man of peace and compromise, he became the mainstay of the Queen's government and the most influential man in State affairs. Whilst he maintained a princely magnificence in his affairs, his private life was pure, gentle and generous. This was the man to whom the brilliant young nephew of his wife and the son of his old friend, Sir Nicholas Bacon, disclosed, some time during the summer of 1580, his scheme, of which there had been no experience, and entrusted his suit, which was rare and unaccustomed. The arguments in its favour at this interview may have followed the following outline: —

I need not remind you of my devotion to learning. You know that from my earliest boyhood I have followed a course of study which has embraced all subjects. I have made myself acquainted with all knowledge which the world possesses. To enable me to do this I mastered all languages in which books are written. During my recent visit to foreign lands, I have recognized how far my country falls behind others in language, and consequently in literature. I would draw your special attention to the remarkable advance which has been made in these matters in France during your lordship's lifetime. When I arrived there in 1576 I made myself acquainted with the principles of the movement which had been carried through by Du Bellay, Ronsard, and their confrères. They recognized that their native language was crude and lacking in gravity and art. First by obtaining a complete mastery of the Greek and Latin languages, as also of those of Italy and Spain, they prepared themselves for a study of the literatures of which those languages, with their idioms and peculiarities, form the basis. Having obtained this mastery they reconstructed their native language and gave their country a medium by which her writers might express their thoughts and emotions. They have made it possible for their countrymen to rival the poets of ancient Greece and Rome. They and others of their countrymen have translated the literary treasures of those ancient nations into their own tongue, and thereby enabled those speaking their language, who are not skilled in classical languages, to enjoy and profit by the works of antiquity. Your lordship knows well the deficiencies of the language of our England, the absence of any literature worthy of the name. In these respects the condition of affairs is far behind that which prevailed in France even before the great movement which Ronsard and Du Bellay initiated. I do not speak of Italy, which possesses a language melodious, facile, and rich, and a literature which can never die.

I know my own powers. I possess every qualification which will enable me to do for my native tongue what the Pléiade have done for theirs. I ask to be permitted to give to my country this great heritage. Others may serve her in the law, others may serve her in affairs of state, but your Lordship knows full well that there are none who could serve her in this respect as could I. You are not

unmindful of the poorness of my estate. This work will not only entail a large outlay of money but it necessitates command of the ablest wits of the nation. This is my suit: that her Majesty will graciously confer on me some office which will enable me to control such literary resources and the services of such men as may be necessary for the accomplishment of this work; further, that she may be pleased from time to time to make grants from the civil list to cover the cost of the work. I need not remind your Lordship what fame will ever attach to her Majesty and how glorious will be the memory of her reign if this great project be effected in it. Your Lordship must realise this because you and her Ladyship, my aunt, are by your attainments qualified to appreciate its full value. My youth may be urged as an objection to my fitness for such a task, but your Lordship knows full well — none better — that my powers are not to be measured by my years. This I will say, I am no vain promiser, but I am assured that I can accomplish all that I contemplate. The Queen hath such confidence in the soundness of your judgment that she will listen to your advice. My prayer to you therefore is that it may please your Lordship both herein and elsewhere to be my patron and urge my suit, which, although rare and unaccustomed, may be granted if it receives your powerful support.

The suit was submitted to the Queen, but without result. Probably it was not urged with a determination to obtain its acceptance in spite of any objections which might be raised by the Queen. Five years after, Bacon, still a suppliant, wrote to Walsingham: “I think the objection to my years will wear away with the length of my suit.” Cautious Lord Burghley would give full weight to the force of this objection if it were advanced by the Queen. He loved this boy, with his extraordinary abilities, but he had such novel and far-reaching ideas. He appeared to have no adequate reverence for his inferior superiors. On leaving Cambridge he had arrogantly condemned its cherished methods of imparting knowledge. Before power was placed in his hands the use he might make of it must be well weighed and considered. What effect might the advancement of Francis Bacon have on Robert Cecil’s career? Granted that the contentions of the former were sound, and the object desirable, should not this work be carried out

by the Universities? Never leap until you know where you are going to alight was a proverb the soundness of which had been proved in Lord Burghley's experience. What might be the outcome if this rare and unaccustomed suit were granted? Better for the Queen, who, though slow to bestow favours, was always ready to encourage hopes, to follow her usual course. She might entertain the motion graciously and return a favourable answer and let it rest there. And so it did.

Then there was a happening which has remained unknown until now.

Chapter XI. BACON'S SECOND VISIT TO THE CONTINENT AND AFTER.

In the "Reliquiæ Bodleianæ," published in 1703, is a letter written without date by Thomas Bodley to Francis Bacon. This letter does not appear to have been known to Mallett, Montague, Dixon, Spedding, or any of Bacon's biographers. It had been lost sight of until the writer noticed it and reproduced it in *Baconiana*. This is the letter: —

My Dear Cousin, — According to your request in your letter (dated the 19th October at Orleans, I received here the 18th of December), I have sent you by your merchant £30 (the thirty is written thus 30 l) sterling for your present supply, and had sent you a greater sum, but that my extraordinary charge this year *hath utterly unfurnished me*. And now, cousin, though I will be no *severe* exactor of the account, either of your money or time, yet for the love I bear you, I am very desirous, both to satisfy myself, and your friends how you prosper in your travels, and how you find yourself bettered thereby, either in knowledge of God, or of the world; the rather, because the Days you have already spent abroad, are now both sufficient to give you Light, how to fix yourself and end with counsel, and accordingly to shape your course constantly unto it. Besides, it is a vulgar scandal unto the travellers, that few return more religious (narrow, *editor*) than they went forth; wherein both my hope and Request is to you, that your principal care be to hold your Foundation, and to make no other use of informing your self in the corruptions and superstitions of other nations, than only thereby to engage your own heart more firmly to the Truth. You live indeed in a country of two several professions, and you shall return a Novice, if you be not able to give an account of the Ordinances, strength, and progress of each, in Reputation, and Party, and how both are supported, ballanced and managed by the state, as being the contrary humours, in the Temper of Predominancy whereof, the Health or Disease of that Body doth consist. These things you will observe, not only as an *English*-man, whom it may concern, to what interest his

country may expect in the consciences of their Neighbours; but also, as a Christian, to consider both the beauties and blemishes, the hopes and dangers of the *church* in all places. Now for the world, I know it *too* well, to persuade you to dive into the practices thereof; rather stand upon your own guard, against all that attempt you there unto, or may practise upon you in your Conscience, Reputation, or your Purse. Resolve, no Man is wise or safe, but he that is honest: And let this Persuasion turn your studies and observations from the Complement and Impostures of the debased age, to more real grounds of wisdom, gathered out of the story of Times past, and out of the government of the present state. Your guide to this, is the knowledge of the country and the people among whom ye live; For the country though you cannot see all places, yet if, as you pass along, you enquire carefully, and further help yourself with Books that are written of the cosmography of those parts, you shall sufficiently gather the strength, Riches, Traffick, Havens, Shipping, *commodities*, vent, and the wants and disadvantages of places. Wherein also, for your good hereafter, and for your friends, it will befit to note their buildings, Furnitures, Entertainments; all their Husbandry, and ingenious inventions, in whatsoever concerneth either Pleasure or Profit.

For the people, your traffick among them, while you learn their language, will sufficiently instruct you in their Habilities, Dispositions, and Humours, if you a little enlarge the Privacy of your own Nature, to seek acquaintance with the best sort of strangers, and *restrain* your *Affections* and Participation, for your own countrymen of whatsoever condition.

In the story of France, you have a *large and pleasant Field* in three lines of their Kings, to observe their alliances and successions, their *Conquests*, their wars, *especially with us*; their Councils, their treaties; and all Rules and examples of experiences and Wisdom, which may be Lights and Remembrances to you hereafter, to Judge of all occurants both at home and abroad.

Lastly, for the Government, your end *must not be like an* Intelligencer, to spend all your time in fishing after the present News, Humours, Graces, *or* Disgraces of Court, which happily may change before you come home; but your

better and more constant ground will be, to know the Consanguinities, Alliances, and Estates of their Princes; Proportion between the Nobility and Magistracy; the Constitutions of their Courts of Justice; the state of the Laws, as well for the making as the execution thereof; How the Sovereignty of the King infuseth itself into all Acts and Ordinances; how many ways they lay Impositions and Taxations, and gather Revenues to the *Crown*.

What be the Liberties and Servitudes of all degrees; what Discipline and Preparations for wars; what Invention for increase of Traffick at home, for multiplying their commodities, encouraging Arts and Manufactures, or of worth in any kind. Also what establishment, to prevent the *Necessities* and *Discontentment* of *People*, To cut off suits at Law, and Duels, to suppress thieves and all Disorders.

To be short, because my purpose is not to bring all your Observations to Heads, but only by these few to let you know what manner of Return your Friends expect *from you*; let me, for all these and all the rest, give you this one Note, which I desire you to observe as the Counsels of a Friend, *Not* to spend your Spirits, and the *precious* time of your Travel, in a Captious Prejudice and censuring of all things, nor in an Infectious Collection of base Vices and Fashions of Men and Women, or general corruption of these times, which will be of use only Among Humorists, for Jests and Table-Talk: but rather strain your Wits and Industry soundly to instruct yourself in all things between *Heaven and Earth* which may tend to Virtue, Wisdom, and Honour, and which may make your life more profitable to your country, and yourself more comfortable to your friends, and acceptable to God. And to conclude, let all these Riches be treasured up, not only in your memory, where time may lessen your stock; but rather in good writings, and Books of Account, which will *keept* them safe for your use hereafter.

And if in this time of your liberal Traffick, you will give me any advertizement of your commodities in these kinds, I will make you as liberal a Return from my self and your Friends here, as I shall be able.

And so commending all your good Endeavours, to him that must either *wither* or *prosper* them, I very kindly bid you farewel.

Your's to be commanded,

Thomas Bodley.

Spedding prints this letter (Vol. II. p. 16) commencing with the words, "Yet for the love I bear," to the end, with the exception of the last sentence, as a letter written probably by Bacon for Essex to send to the Earl of Rutland. He identifies it as "the letter which the compiler of Stephens' Catalogue took for a letter addressed by Bacon to Buckingham," which he says it could not be. The original is at Lambeth (MSS. 936, fo. 218). The seal remains, but the part of the last sheet which contained the signature on one side, and the superscription on the other, has been torn off. The letter commences, "*My good Lord*," and ends, "*Your Lordship's in all duty to serve you*." It would appear, therefore, that someone had access to Bodley's letter to Bacon, and, approving its contents, used its contents a second time.

There are two palpable deductions to be drawn from this letter: (1) That Bacon was on a journey through *several* countries to obtain knowledge of their customs, laws, religion, military strength, shipping, and whatsoever concerneth pleasure or profit. There is a striking correspondence between Bodley's advice and the description of Bacon's travels found in the "Life" prefixed to "L'Histoire Naturelle." (2) That Bacon was being supported by Bodley and other of his friends, who desired him to keep a record of all that he observed and learnt, and to report from time to time as he progressed, and in return, said Bodley, "I will make you as liberal a return from myself and your friends here as I shall be able." This letter was written from England, and there is a paragraph in Bodley's "Life," written by himself, which makes it possible to fix the year: —

"My resolution fully taken I departed out of England anno 1576 and continued very neare foure yeares abroad, and that in sundry parts of Italy, France, and Germany. A good while after my return to wit, in the yeare 1585 I was employed by the Queen," *etc.*

If this letter was written between 1576 and 1579 it would appear strange that Bodley and others should be providing Bacon with money for his travels, and requiring reports from him, whilst his father, Sir Nicholas Bacon, was alive and prosperous. No such difficulty, however, arises, for the letter, being sent from England, could not have been written between the date of Bacon's first departure for France in 1576 and his return on his father's death in 1579, for during the whole of that time Bodley was abroad. It is stated in it that Bacon wrote from Orleans a letter dated 19th October, the year not being given. This could not be in 1580, for Bacon wrote to Lord Burghley from Gray's Inn on the 18th October, 1580. Spedding commences the paragraph immediately following this letter by saying, "From this time we have no further news of Francis Bacon till the 5th of April, 1582," and although he does not reproduce the letter, he relies on a letter from Faunt to Anthony Bacon, to which that date is attributed in Birch's " Memorials," Vol. I. page 22. In it Faunt refers to having seen Anthony's mother and his brother Francis. Faunt left Paris for England on the 22nd March, 1582. This letter was written on the 15th of the following month, so no trace has been found of Francis being in England between 18th October, 1580, and 5th of April, 1582. Bodley's letter, must, therefore, have been written in December, 1581, when Bacon was abroad making a journey through several countries. From the foregoing facts it is impossible to form any other conclusion. Now for the first time this journey has been made known. There is a letter amongst the State papers in the Record Office, dated February, 1581, written by Anthony Bacon to Lord Burghley, enclosing a note of advice and instructions for his brother Francis. Anthony was an experienced traveller, and was then abroad. It reads as though he was sending advice and instructions to his younger brother, who was about to start on travels through countries with which Anthony was familiar. If so, Francis would leave England early in March, 1581 — that is, if he had not left before this letter was received by Burghley.

Having established beyond reasonable doubt the fact of this journey, a new and remarkable suggestion presents itself. Spedding, when dealing with the year

1582, prints “Notes on the State of Christendom,”[29] with the following remarks: —

“If that paper of notes concerning ‘The State of Europe’ which was printed as Bacon’s in the supplement to Stephens’ second collection in 1734, reprinted by Mallet in 1760, and has been placed at the beginning of his political writings in all editions since 1563, be really of his composition, this is the period of his life to which it belongs. I must confess, however, that I am not satisfied with the evidence or authority upon which it appears to have been ascribed to him.”

Robert Stephens, who was Historiographer Royal in the reign of William and Mary, states that the Earl of Oxford placed in his hands some neglected manuscripts and loose papers to see whether any of the Lord Bacon’s compositions lay concealed there and were fit for publication. He found some of them written, and others amended, with his lordship’s own hand. He found certain of the treatises had been published by him, and that others, certainly genuine, which had not, were fit to be transcribed if not divulged. Spedding states that he has little doubt that this paper on the state of Europe was among these manuscripts and loose papers, for the editor states that the supplementary pieces (of which this was one) were added from originals found among Stephens’ papers. The original is now among the Harleian MSS. in the British Museum. Spedding thus describes it: —

“The Harleian MS. is a copy in an old hand, probably contemporary, but not Francis Bacon’s. A few sentences have been inserted afterwards by the same hand, and two by another which is very like Anthony Bacon’s; none in Francis’s. The blanks have all been filled up, but no words have been corrected, though it is obvious that in some places they stand in need of correction.

“Certain allusions to events then passing (which will be pointed out in their place) prove that the original paper was written, or at least completed, in the summer of 1582, at which time Francis Bacon was studying law in Gray’s Inn, while Anthony was travelling in France in search of political intelligence and was in close correspondence with Nicholas Faunt, a secretary of Sir Francis Walsingham’s, who had spent the previous year in France, Germany,

Switzerland, and the north of Italy, on the same errand; and was now living about the English Court, studying affairs at home, and collecting and arranging the observations which he had made abroad, 'having already recovered all his writings and books which he had left behind him in Italy and in Frankfort' (see Birch's 'Memoirs,' I. 24), and it is remembered that if this paper belonged to Anthony Bacon, it would naturally descend at his death to Francis and so remain among his manuscripts, where it is supposed to have been found.

"Thus it appears that the external evidence justifies no inference as to the authorship, and the only question is whether the *style* can be considered conclusive. To me it certainly is not. But as this is a point upon which the reader should be allowed to judge for himself, and as the paper is interesting in itself and historically valuable and has always passed for Bacon's, it is here printed from the original though (to distinguish it from his undoubted compositions) in a smaller type."

Spedding's difficulty in accepting this paper as from Bacon's pen really lay in the fact that from the internal evidence it is obvious that it was written by one who had himself travelled through, at any rate, some of the countries described. The results of personal observation are again and again apparent. According to Spedding, Bacon was in 1581-1582 studying law at Gray's Inn; according to Bodley he was on the Continent making observations for his future guidance. The reader can judge of the value of the external evidence. It is not conclusive, but the draft being found amongst papers which were unquestionably Bacon's writings and being adopted as Bacon's and published as such by those who found it, the balance of probabilities is distinctly in favour of its being his. As to the internal evidence much may be said. It corresponds as closely as it is possible with Bodley's requirements as set forth in his letter of December. It is exactly "the manner of return" Bodley wrote to Francis "your friends expect from you." "And," he added, "if in this time of your liberal Traffick, you will give me any advertisement of your commodities in these kinds, I will make you as liberal a return from myself and your friends here as I shall be able."

The date agrees with that of Bacon's second visit to the Continent. In Spedding's Life and Letters it occupies twelve and a-half pages, of which five are occupied by descriptions of Italy, one of Austria, two of Germany (chiefly a recital of names and places), two of France, three-quarters of Spain, one and three-quarters of Portugal, Poland, Denmark, and Sweden. This may have been Bacon's itinerary in 1581-2.

Italy is treated with considerable detail and was undoubtedly described from personal observation, as were France and Spain. In a less degree the description of Austria, Poland and Denmark produces this impression; in a still smaller degree Portugal and Sweden, and it is quite absent from the description of Germany. Florence, Venice, Mantua, Genoa, Savoy, are dealt with in most detail. Rawley states that it was Bacon's intention to have stayed abroad some years longer when he was called home by the death of his father, to find himself left in straightened circumstances. Then followed his ineffectual suit, which he still persisted in. Bodley evidently was, if not the instigator, at any rate the paymaster for this second journey. Anthony's letter of February, 1581, points to Burghley as a participator in the project. He would assist not only out of kindly feeling, but the journey would at any rate get this ambitious, determined young man out of the way for a time, and possibly the journey might get this unaccustomed suit out of his mind. Thus it came about.

From Faunt's letters, Spedding says we derive what little information we have with regard to Francis's proceedings from 1583 to 1584. "From them we gather little more than that he remained studying at Gray's Inn, occasionally visiting his mother at Gorhambury, or going with her to hear Travers at the Temple and occasionally appearing at the Court."

But the suit was not abandoned, for there is the letter of 25th August, 1585, to Walsingham, when Bacon writes: "I think the objection of my years will wear away with the length of my suit. The very stay doth in this respect concern me, because I am thereby hindered to take a course of practice which by the leave of God, if her Majesty like not of my suit, I must and will follow: not for any

necessity of estate, but for my credit sake, which I know by living out of action will wear."

Again, the old, "rare and unaccustomed suit" of which the Queen could have had no experience! Either the persuasive powers of Burghley had failed or he had not exerted them. Probably the latter, because the troublesome, determined young man is now worrying Walsingham and Hatton to urge its acceptance with the Queen. The purport of the foregoing extract effectually precludes the possibility of this suit referring to his advancement at the bar. For five years it has been proceeding — he has been indulging in hopes which have been unfulfilled. Now he will wait no longer, but he will adopt a course which, if her Majesty like not his suit, by the leave of God he must and will follow, not for any necessity of making money but because he feels impelled to it by a sense of responsibility which he must fulfil. Walsingham and Hatton do not appear to have helped the matter forward. There was little probability of them succeeding in influencing the Queen where Burghley had failed. There was still less probability of them attempting to influence her if Burghley objected. Had this suit referred to advancement in the law it would have been granted with the aid of Burghley's influence years before. Had it referred to some ordinary office of State, friends so powerful as Burghley, Walsingham and Hatton could and would have obtained anything within reason for this brilliant young son of Sir Nicholas Bacon, for there was no complication with Essex until after 1591. But this rare and unaccustomed suit of which there had been no experience was another matter.

Six more years pass, and although there is now no suit to the Queen there is the same idea prevailing in the letter to Burghley — a seeking for help to achieve some great scheme upon which Bacon's mind was so fixed "as it cannot be removed," "whether it be curiosity, vainglory or nature, or (if one take it favourably) philanthropia." Still he required the command of more wits than of a man's own, which is the thing he did greatly affect. Still his course was not to get. Still the determination to achieve the object without help, if help could not be obtained — to achieve it by becoming some sorry bookmaker or a pioneer in

that mine of truth which Anaxagoras said lay so deep. This is emphasised. These are “thoughts rather than words, being set down without all art, disguising or reservation.”

There are two significant sentences in this letter written to Burghley when Bacon was 31 years of age. He describes Burghley as “the second founder of my poor estate,” and, further, he uses the expression “And if your Lordship will not carry me on.” What can these allusions mean but that Burghley had been rendering financial assistance to his nephew? If the theory here put forward as to the nature of the suit be correct, the object was one which would have Burghley’s cordial support. That he had expressed approval of it must be deduced from the letter of the 16th of September, 1580. The object was one which, without doubt, would find still warmer support from Lady Mildred. But the suit was so unprecedented that it is not to be wondered at that Burghley did not try to force it through. The work was going forward all the time — slowly for lack of means and official recognition. Burghley, generous in his nature, lavish in private life, might, however, be expected to help a work which he would be glad to see carried to a successful conclusion.

Had he been less cautious and let young Francis have his head, what might not have happened! But there was always the fear of letting this huge intellectual power forge ahead without restraint. It was, however, working out unseen its scheme and that, too, with Burghley’s help and that of others. The period from 1576 to 1623 — only 47 years — sees the English language developed from a state of almost barbaric crudeness to the highest pitch which any language, classical or modern, has reached. There was but one workman living at that period who could have constructed that wonderful instrument and used it to produce such magnificent examples of its possibilities. It is as reasonable to take up a watch keeping perfect time and aver that the parts came together by accident, as to contend that the English language of the Authorised Version of the Bible and the works of Shakespeare were the result of a general up-springing of literary taste which was diffused amongst a few writers of very mediocre ability. The English Renaissance was conceived in France and born in England

in 1579. It ran its course and in 1623 attained its maturity; but when Francis Bacon was no more — he who had performed that in our tongue which may be preferred either to insolent Greece or haughty Rome— “things daily fall, wits grow downward, and eloquence grows backward: so that he may be named and stand as the mark and ἀχμή of our language.”

Chapter XII. IS IT PROBABLE THAT BACON LEFT MANUSCRIPTS HIDDEN AWAY?

It is difficult to leave this subject without some reference to the articles which have appeared in the press and magazines referring to the suggestion that there were left concealed literary remains of Bacon hitherto undiscovered.

In an article which recently appeared in a Shakespearean journal, a writer who evidently knows little about the Elizabethan period said: “But why should Bacon want to bury manuscripts, anyhow? Who does bury manuscripts? Besides, they had been printed and were, therefore, rubbish and waste paper merely.” The manuscript of John Harrington’s translation of Ariosto’s “Orlando Furioso” may be seen in the British Museum. It is beautifully written on quarto paper. It was, apparently, the fair copy sent to the printer from which the type was to be set up. Be this as it may, it was undoubtedly a copy upon which Bacon marked off the verses which are to go on each page and set out the folio of each page and the printer’s signature which was to appear at the bottom. It also contains instructions to the printer as to the type to be used. This manuscript was not considered “rubbish and waste paper merely.”

Francis Bacon has again and again insisted upon the value of history. In the “Advancement of Learning” he points out to the King “the indignity and unworthiness of the history of England as it now is, in the main continuation thereof.” No man appreciated as did Bacon the importance in the history of England of the epoch in which he lived. That a truthful relation of the events of those times would be invaluable to posterity he knew full well. He of all men living at that time was best qualified to write such a history. He recognised that there were objections to a history being written, or, at any rate, published, wherein the actions of persons living were described, for he said “it must be confessed that such kind of relations, specially if they be published about the times of things done, seeing very often that they are written with passion or partiality, of all other narrations, are most suspected.” It is hardly conceivable

that Bacon should have failed to provide a faithful history of his own times for the benefit of posterity, or, at any rate, that he should have failed to preserve the materials for such a history. Neither the history nor such materials are known to be in existence. Supposing Bacon had prepared either the one or the other, what could he do with it? Hand it to Rawley with instructions for it to be printed? With a strong probability, if it were a faithful history, that it would never be published, but that it would be destroyed, he would never take such a risk. There would only be one course open to him. To conceal it in some place where it would not be likely to be disturbed, in which it might remain in safety, possibly for hundreds of years. And then leave a clue either in cypher or otherwise by which it might be recovered.

It is by no means outside the range of possibility that Bacon as early as 1588 had opened a receptacle for books and manuscripts which he desired should go down to posterity, and fearing their loss from any cause, he carefully concealed them, adding to the store from time to time. If he did so he left a problem to be solved, and arranged the place of concealment so that it could only be found by a solution of the problem.

The emblems on two title-pages of two books of the period are very significant. "Truth brought to Light and discovered by Time" is a narrative history of the first fourteen years of King James' reign. One portion of the engraved title-page represents a spreading tree growing up out of a coffin, full fraught with various fruits (manuscripts and books) most fresh and fair to make succeeding times most rich and rare. In the Emblem (Fig. III.) now reproduced, which is found on the title-page of the first edition of "New Atlantis," 1627,[30] Truth personified by a naked woman is being revealed by Father Time, and the inscription round the device is "*Tempore patet occulta veritas* — in time the hidden truth shall be revealed."

Then, in further confirmation of this view, there is the statement of Rawley in his introduction to the "Manes Verulamiani." Speaking of the fame of his illustrious master he says, "Be this moreover enough, to have laid, as it were, the foundations, in the name of the present age. Every age will, methinks, adorn and

amplify this structure, but to what age it may be vouchsafed to set the finishing hand — this is known only to God and the Fates."

Fig. III.

From the Title Page of "New Atlantis," 1627.

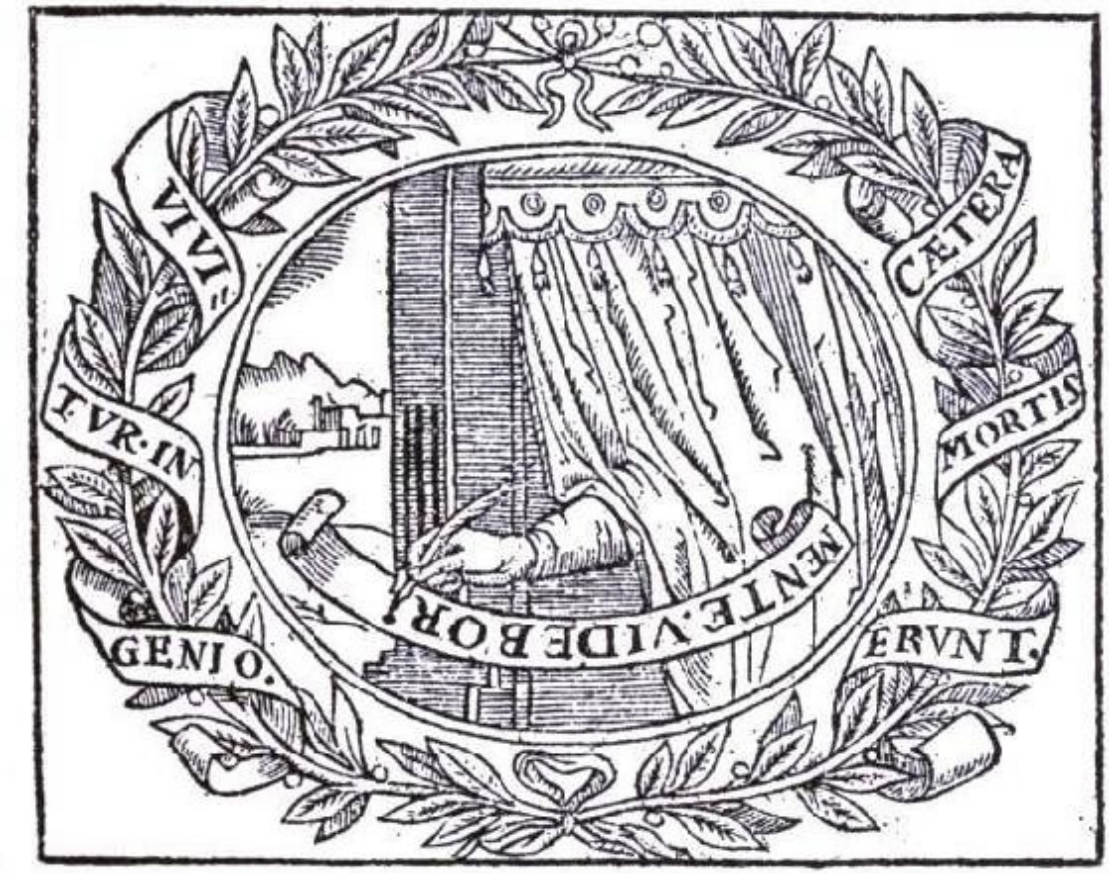

Fig. IV.

From the Title Page of Peacham's "Minerva Britannia," 1612.

Chapter XIII. HOW THE ELIZABETHAN LITERATURE WAS PRODUCED.

The half century from 1576 to 1625 stands by itself in the history of the literature of this country. During that period not only was the English language made, not only were there produced the finest examples of its capacities, which to-day exist, but the knowledge and wisdom possessed by the classical writers, the histories of the principal nations of the world, practically everything that was worth knowing in the literature which existed in other countries were, for the first time, made available in the English tongue. And what is still more remarkable, these translations were printed and published. These works embraced every art and subject which can be imagined. Further, during this period there were issued a large number of books crowded with information upon general subjects. The names on the title-pages of many of these works are unknown. It is astonishing how many men as to whom nothing can be learnt, appear about this time to have written one book and one book only.

These translations were published at a considerable cost. For such works, being printed in the English language, purchasers were practically confined to this country, and their number was very limited. The quantity of copies constituting an edition must have been small. It is impossible to believe that the sale of these books could realise the amount of their cost.

Definite information on this point is difficult to obtain, for little is known as to the prices at which these books were sold.

It appears from the “Transcripts of the Stationers’ Registers” that the maximum number of copies that went to make up an edition was in the interest of the workman fixed at 1,250 copies, so that if a larger number were required the type had to be re-set for each additional 1,250 copies. Double impressions of 2,500 were allowed of primers, catechisms, proclamations, statutes and almanacs. But the solid literature which came into the language at this period would not be required in such quantities. The printer was not usually the vendor

of the books. The publisher and bookseller or stationer carried on in most cases a distinct business.

Pamphlets, sermons, plays, books of poems, formed the staple ware of the stationer. The style of the book out of which the stationer made his money may be gathered from the following extract from *The Return from Parnassus*, Act I, scene 3: —

Ingenioso. — Danter thou art deceived, wit is dearer than thou takest it to bee. I tell thee this libel of Cambridge has much salt and pepper in the nose: it will sell sheerely underhand when all those bookes of exhortations and catechisms lie moulding on thy shopboard.

Danter. — It's true, but good fayth, M. Ingenioso, I lost by your last booke; and you know there is many a one that pays me largely for the printing of their inventions, but for all this you shall have 40 shillings and an odde pottle of wine.

Ingenioso. — 40 shillings? a fit reward for one of your reumatick poets, that beslavers all the paper he comes by, and furnishes the Chaundlers with wast papers to wrap candles in: ... it's the gallantest Child my invention was ever delivered off. The title is, a Chronicle of

Cambridge Cuckolds; here a man may see, what day of the moneth such a man's commons were inclosed, and when throwne open, and when any entayled some odde crownes upon the heires of their bodies unlawfully begotten; speake quickly, ells I am gone.

Danter. — Oh this will sell gallantly. Ile have it whatsoever it cost, will you walk on, M. Ingenioso, weele sit over a cup of wine and agree on it.

The publication of such works as Hollingshed's "Chronicles," North's "Plutarch's Lives," Grimston's "History of France," and "The French Academy," could not have been produced with profit as the object. A large body of evidence may be brought forward to support this view, but space will only permit two examples to be here set forth.

In the dedication to Sir William Cecil, of Hollingshed's "Chronicles," 1587, the writer says:

Yet when the volume grew so great as they that were to defraie the charges for the impression were not willing to go through with the whole, they resolved first to publish the histories of England, Scotland, and Ireland with their descriptions.

John Dee spent most of the year 1576 in writing a series of volumes to be entitled "General and Rare Memorials pertayning to the perfect Art of Navigation." In 1577 the first volume was ready for the press. In June he had to borrow £40 from one friend, £20 from another, and £27 upon "the chayn of gold." In the following August John Day commenced printing it at his press in

Aldersgate. The title was “The British Monarchy or Hexameron Brytannicum,” and the edition consisted of 100 copies.

The second volume, “The British Complement,” was ready in the following December. It was never published. Dee states in his Diary that the printing would cost many hundreds of pounds, as it contained tables and figures, and he must first have “a comfortable and sufficient opportunity or supply thereto.” This he was unable to procure, so the book remained in manuscript.[31]

Books of this class were never produced with the object of making profit. The proceeds of sale would not cover the cost of printing and publishing, without any provision for the remuneration of the translator or author. Why were they published, and how was the cost provided?

There was, however, another source of revenue open to the author of a book. Henry Peacham, in “The Truth of our Time,” says: —

“But then you may say, the Dedication will bee worth a great matter, either in present reward of money, or preferment by your Patrones Letter, or other means. And for this purpose you prefixe a learned and as Panegyricall Epistle as can,” *etc.*

It is beyond question that an author usually obtained a considerable contribution towards the cost of the production of a book from the person to whom the dedication was addressed. A number of books published during the period from 1576 to 1598 are dedicated to the Queen, to the Earl of Leicester, and to Lord Burghley. One can only offer a suggestion on this point which may or may not be correct. If Francis Bacon was concerned in the issue of these translations and other works, and Burghley was assisting him financially, it is probable that Burghley would procure grants from the Queen in respect of books which were dedicated to her, and would provide funds towards the cost of such books as were dedicated to himself. “The Arte of English Poesie” was written with the intention that it should be dedicated to the Queen, but there was a change in the plans, and Burghley’s name was substituted. When Bacon, in 1591, is threatening to become “a sorry bookmaker,” he describes Burghley as the second founder of his poor estate, and uses the expression, “If your Lordship

will not carry me on," which can only mean that as to the matter which is the subject of the letter, Burghley had not merely been assisting but carrying him. The evidence which exists is strong enough to warrant putting forward this theory as to the frequency of the names of the Queen and Burghley on the dedications.

The Earl of Leicester desired to have the reputation of being a patron of the arts, and was willing to pay for advertisement. He was the Chancellor of Oxford University, and evidently recognised the value of printing, for in 1585 he erected, at his own expense, a new printing press for the use of the University. If he paid at all for dedications he would pay liberally. But, of course, the Queen, Burghley, and Leicester were accessible to others besides Bacon, and the argument goes no further than that towards the production of certain books upon which their names appear the patrons provided part of the cost. The recognition of this fact, however, does not detract from the importance of the expressions used by Bacon in his letter to Burghley.

There is abundant testimony to the fact that it was the custom, during the Elizabethan age, for an author to suppress his own name, and on the title-page[32] substitute either the initials or name of some other person. The title-pages of this period are as unreliable as are the names or initials affixed to the dedications and epistles "To the Reader."

In 1624 was published "The Historie of the Life and Death of Mary Stuart Queene of Scotland." The dedication is signed Wil Stranguage. In 1636 it was reprinted, the same dedication being signed W. Vdall. There are numerous similar instances.

Chapter XIV. THE CLUE TO THE MYSTERY OF BACON'S LIFE.

The theory now put forward is based upon the assumption that Francis Bacon at a very early age adopted the conception that he would devote his life to the construction of an adequate language and literature for his country and that he would do this remaining invisible. If he was the author of "The Anatomie of the Mind," 1576, and of "Beautiful Blossoms," 1577, he must have adopted this plan of obscurity as early as his sixteenth year. It is possible, however, that it may be shown that at a date still earlier he had decided upon this course. This, however, is beyond doubt — that if Francis Bacon was associated in any way with the literature of England from 1570 to 1605, with the exception of the small volume of essays published in 1597, he most carefully concealed his connection with it.

"Therefore, set it down," he says in the essay Of Simulation and Dissimulation, "that a habit of secrecy is both politic and moral," and in *Examples of the Antitheta*,[33] "Dissimulation is a compendious wisdome." Here again is the same idea: "Beside in all wise humane Government, they that sit at the helme, doe more happily bring their purposes about, and insinuate more easily things fit for the people by pretexts, and oblique courses; than by ... downright dealing. Nay (which perchance may seem very strange) in things meerely naturall, you may sooner deceive nature than force her; so improper and selfeimpeaching are open direct proceedings; whereas on the other side, an oblique and an insinuating way, gently glides along, and compasseth the intended effect."[34]

It is noteworthy that Bacon had a quaint conceit of the Divine Being which he was never tired of repeating. In the preface to the "Advancement of Learning" (1640), the following passage occurs: —

"*For of the knowledges which contemplate the works of Nature, the holy Philosopher hath said expressly*; that the glory of God is to conceal a thing, but the glory of the King is to find it out: *as if the Divine Nature, according to the*

innocent and sweet play of children, which hide themselves to the end they may be found; took delight to hide his works, to the end they might be found out; and of his indulgence and goodness to mankind, had chosen the Soule of man to be his Play-fellow in this game."

Again on page 45 of the work itself he says: —

"For so he (King Solomon) saith expressly, *The Glory of God is to conceale a thing, but the Glory of a King is to find it out*. As if according to that innocent and affectionate play of children, the Divine Majesty took delight to hide his works, to the end to have them found out, and as if *Kings* could not obtain a greater Honour, then to be God's play-fellowes in that game, especially considering the great command they have of wits and means, whereby the investigation of all things may be perfected."

Another phase of the same idea is to be found on page 136.

In the author's preface to the "Novum Organum" the following passage occurs: —

"Whereas of the sciences which regard nature the Holy Philosopher declares that 'it is the glory of God to conceal a thing, but it is the glory of the King to find it out.' Even as though the Divine Nature took pleasure in the innocent and kindly sport of children playing at hide and seek, and vouched-safe of his kindness and goodness to admit the human spirit for his play fellow in that game."

In almost identical words Bacon suggests the same conception in "In Valerius Terminus" and in "Filum Labyrinthi."

In the Epistle Dedicatorie of "The French Academie" and elsewhere the author is insisting on the same idea that "He (God) cannot be seene of any mortal creature but is notwithstanding known by his works."

The close connection of Francis Bacon with the works (now seldom studied) of the Emblem writers is vouched for by J. Baudoin.

Oliver Lector in "Letters from the Dead to the Dead" has given examples of his association with the Dutch and French emblem writers. Three Englishmen appear to have indulged in this fascinating pursuit — George Whitney (1589),

Henry Peacham (1612), and George Withers (1634). From the Baconian point of view Peacham's "Minerva Britannia" is by far the most interesting. The Emblem on page 34 is addressed "To the most judicious and learned, Sir Francis Bacon Knight." On the opposite leaf, paged thus, ·33,[37] the design represents a hand holding a spear as in the act of shaking it. But it is the frontispiece which bears specially on the present contention. The design is now reproduced (Fig. IV). A curtain is drawn to hide a figure, the hand only of which is protruding. It has just written the words "Mente Videbor"— "By the mind I shall be seen." Around the scroll are the words "Vivitur ingenio cetera mortis erunt" — one lives in one's genius, other things shall be (or pass away) in death.

That emblem represents the secret of Francis Bacon's life. At a very early age, probably before he was twelve, he had conceived the idea that he would imitate God, that he would hide his works in order that they might be found out — that he would be seen only by his mind and that his image should be concealed. There was no haphazard work about it. It was not simply that having written poems or plays, and desiring not to be known as the author on publishing them, he put someone else's name on the title-page. There was first the conception of the idea, and then the carefully-elaborated scheme for carrying it out.

There are numerous allusions in Elizabethan and early Jacobean literature to someone who was active in literary matters but preferred to remain unrecognised. Amongst these there are some which directly refer to Francis Bacon, others which occur in books or under circumstances which suggest association with him. It is not contended that they amount to direct testimony, but the cumulative force of this evidence must not be ignored. In some of the emblem books of the period these allusions are frequent.

Then there is John Owen's epigram appearing in his "Epigrammatum," published in 1612.

AD. D.B.

"Si bene qui latuit, bene vixit, tu bene vivis:

Ingeniumque tuum grande latendo patet."

"Thou livest well if one well hid well lives,
And thy great genius in being concealed is revealed."

D. is elsewhere used by Owen as the initial of Dominus. The suggestion that Ad. D.B. represents Ad Dominum Baconum is therefore reasonable.

Thomas Powell published in 1630 the "Attourney's Academy." The book is dedicated "To True Nobility and Tryde learning beholden To no Mountaine for Eminence, nor supportment for Height, Francis, Lord Verulam and Viscount St. Albanes." Then follow these lines: —

"O Give me leave to pull the Curtaine by
That clouds thy Worth in such obscurity.
Good Seneca, stay but a while thy bleeding,
T' accept what I received at thy Reading:
Here I present it in a solemne strayne,
And thus I pluckt the Curtayne backe again."

In the "Mirrour of State and Eloquence," published in 1656, the frontispiece is a very bad copy of Marshall's portrait of Bacon prefixed to the 1640 Gilbert Wat's "Advancement of Learning." Under it are these lines: —

"Grace, Honour, virtue, Learning, witt,
Are all within this Porture knitt
And left to time that it may tell,
What worth within this Peere did dwell."

The frontispiece previously referred to of "Truth brought to Light and discovered by Time, or a discourse and Historicall narration of the first XIIII. yeares of King James Reign," published in 1651, is full of cryptic meaning and in one section of it there is a representation of a coffin out of which is growing

"A spreading Tree

Full fraught with various Fruits most fresh and fair
To make succeeding Times most rich and rare."

The fruits are books and manuscripts. The volume contains speeches of Bacon and copies of official documents signed by him.

The books of the emblem writers are still more remarkable. "Jacobi Bornitii Emblemata Ethico Politica," 1659, contains at least a dozen plates in which Bacon is represented. A suggestive emblem is No. 1 of Cornelii Giselberti Plempii Amsterodarnum Monogrammon, bearing date 1616, the year of Shakespeare's death. It is now reproduced (Fig. V.). It will be observed that the initial letters of each word in the sentence — *Obscœnumque nimis crepuit Fortuna Batavis appellanda* — yield F. Bacon. There are in other designs figures which are evidently intended to represent Bacon. Emblem XXXVI. shows the inside of a printer's shop and two men at work in the foreground blacking and fixing the type. Behind is a workman setting type, and standing beside him, apparently directing, or at any rate observing him, is a man with the well-known Bacon hat on.

The contention may be stated thus: — Francis Bacon possessed, to quote Macaulay, "the most exquisitely constructed intellect that has ever been bestowed on any of the children of men." Hallam described him as "the wisest, greatest of mankind," and affirmed that he might be compared to Aristotle, Thucydides, Tacitus, Philippe de Comines, Machiavelli, Davila, Hume, "all of these together," and confirming this view Addison said that "he possessed at once all those extraordinary talents which were divided amongst the greatest authors of antiquity." At twelve years of age in industry he surpassed the capacity, and, in his mind, the range of his contemporaries, and had acquired a thorough command of the classical and modern languages. "He, after he had survaied all the Records of Antiquity, after the volumes of men, betook himself to the volume of the world and conquered whatever books possest." Having, whilst still a youth, taken all knowledge to be his province, he had read, marked, and absorbed the contents of nearly every book that had been printed. How that

boy read! Points of importance he underlined and noted in the margin. Every subject he mastered — mathematics, geometry, music, poetry, painting, astronomy, astrology, classical drama and poetry, philosophy, history, theology, architecture.

Then — or perhaps before — came this marvellous conception, "Like God I will be seen by my works, although my image shall never be visible — *Mente videbor*. By the mind I shall be seen." So equipped, and with such a scheme, he commenced and successfully carried through that colossal enterprise in which he sought the good of all men, though in a despised weed. "This," he said, "whether it be curiosity or vainglory, or (if one takes it favourably) philanthropia, is so fixed in my mind as it cannot be removed."

Translations of the classics, of histories, and other works were made. In those he no doubt had assistance by the commandment of more wits than his own, which is a thing he greatly affected. Books came from his pen — poetry and prose — at a rate which, when the truth is revealed, will literally "stagger humanity." Books were written by others under his direction. He saw them through the press, and he did more. He had his own wood blocks of devices, some, at any rate, of which were his own design, and every book produced under his direction, whether written by him or not, was marked by the use of one or more of these wood blocks. The favourite device was the light A and the dark A. Probably the first book published in England which was marked with this device was *De Rep. Anglorum Instauranda libri decem, Authore Thoma Chalonero Equite, Anglo*. This was printed by Thomas Vautrollerius,[36] and bears date 1579.

Vautrollier, and afterwards Richard Field, printed many of the books in the issue of which Bacon was concerned from 1579 onwards. Henry Bynneman, and afterwards his assignees Ralph Newbery and Henry Denham and George Bishop, who was associated with Denham, were also printing books issued under his auspices, and later Adam Islip, George Eld and James Haviland came in for a liberal share of his patronage.

The cost of printing and publishing must have been very great. If the facts ever come to light it will probably be found that Burghley was Bacon's mainstay

for financial support. It will also be found that Lady Anne Bacon and Anthony Bacon were liberal contributors to the funds, and that the cause of Francis Bacon's monetary difficulties and consequent debts was the heavy obligation which he personally undertook in connection with the production of the Elizabethan literature.

In the Dedications, Prefaces, and Epistles "To the Reader" also Francis Bacon's mind may be recognised. When Addison wrote of Bacon, "One does not know which to admire most in his writings, the strength of reason, force of style, or brightness of imagination," his words might have been inspired by these prefixes to the literature of this period. When once the student has made himself thoroughly acquainted with Bacon's style of writing prefaces he can never fail to recognise it, especially if he reads the passages aloud. The Epistle Dedicatorie to the 1625 edition of Barclay's "Argenis," signed Kingesmill Long, is one of the finest examples of Baconian English extant. Who but the writer of the Shakespeare plays could have written that specimen of musical language? To hear it read aloud gives all the enjoyment of listening to a fine composition of music. It is the same with the Shakespeare plays; only when they are read aloud can the richness and charm of the language they contain be appreciated.

Bacon's work can never be understood by anyone who has not realised the marvellous character of the mind of the boy, his phenomenal industry, and the fact that "he could imagine like a poet and execute like a clerk of the works." It has been suggested that he had a secret Society, by the agency of which he carried through his works, but it is difficult to find any evidence that such a Society existed. It may be that he had helpers without there having been anything of the nature of a Society.

From 1575 to 1605 (thirty years) with the exception of the trifles published as Essays in 1597, there are no acknowledged fruits of his work to which his name is attached. Even the two books of the "Advancement of Learning," published in 1605, would have made little demands on his time. Edmund Burke said: "Who is there that hearing the name of Bacon does not instantly recognise everything of genius the most profound, of literature the most extensive, of discovery the most

penetrating, of observation of human life the most distinguished and refined." For such a man to write "The two books" would be no hard or lengthy task.

The wonder is that Francis Bacon should have attached his name to the 1597 edition of the essays. He had written and published under other names tomes of essays of at least equal merit. In Aphorism 128 of the "Novum Organum" Bacon says, "But how sincere I am in my profession of affection and goodwill towards the received sciences my published writings, especially the books on the Advancement of Learning, sufficiently shew." What are the published writings referred to? The only works which bore his name were the incomplete volume of the Essays and the "Wisdom of the Ancients," to neither of which the words quoted are applicable.

Anthony Bacon, writing to Lady Anne in April, 1593, referring to her "motherly offer" to help Francis out of debt by being content to bestow the whole interest in an estate in Essex, called Markes, said "beseeching you to believe that being so near and dear unto me as he is, it cannot but be a grief unto me to see a mind that hath given so sufficient proof of itself in having brought forth many good thoughts for the general to be overburdened and cumbered with a care of clearing his particular estate."

In 1593 nothing had been published under Bacon's name, and there is not any production of his known which would justify Anthony's remark. What was his motive in selecting this insignificant little volume of essays whereby to proclaim himself a writer? One can understand his object in addressing James in *The Two Books of the Advancement of Learning*. He obtained in 1606, as Peacham has it, "preferment by his Patrone's letter" by being appointed Solicitor-General.

During all this period — 1575 to 1605— "the most exquisitely constructed mind that has ever been bestowed on any of the children of men" appears to have been dormant. Take the first three volumes of Spedding's "Life and Letters," and carefully note all that is recorded as the product of that mind during the years when it must have been at the zenith of its power and activity. All the letters and tracts accredited to Bacon in them which have come down to us would not account for six months — not for three months — of its occupation.

The explanation that he was building up his great system of inductive philosophy is quite inadequate. Rawley speaks of the "Novum Organum" as having been in hand for twelve years. This would give 1608 as the year when it was commenced. The "Cogitata et Visa," of which it was an amplification, was probably written in 1606 or 1607, for on the 17th February, 1607-8, Bodley writes acknowledging the receipt of it and commenting on it.

Rawley says that it was during the last five years of Bacon's life that he composed the greatest part of his books and writings both in English and Latin, and supplies a list which comprises all his acknowledged published works except the "Novum Organum" and the Essays.

In "The Statesmen and Favourites of England since the Reformation," it is stated that the universal knowledge and comprehension of things rendered Francis Bacon the observation of great and wise men, and afterward the wonder of all. Yet it is remarkable how few are the references to him amongst his contemporaries. Practically the only one that would enable a reader to gain any knowledge of his personality is Francis Osborn, who, in letters to his son, published in 1658, describes him as he was in the last few years of his life. No one has left data which enables a clear impression to be formed of Francis Bacon as he was up to his fortieth year. The omission may be described as a conspiracy of silence. How exactly the circumstances appear to fit in with the first line of John Owen's epigram to Dominus B., published in 1612!— "Thou livest well if one well hid well lives"; and if the suggestion now put forward be correct that Bacon deliberately resolved that his image and personality should never be seen, but only the fruits of his mind — the issues of his brain, to use Rawley's expression — how apt is the second line of the epigram: "And thy great genius in being concealed, is revealed."

Chapter XV. BURGHLEY AND BACON.

There was published in 1732 “The Life of the Great Statesman William Cecil, Lord Burghley.” The preface signed by Arthur Collins states: —

The work I have for several years engaged in, of treating of those families that have been Barons of this Kingdom, necessarily induced me to apply to our Nobility for such helps, as might illustrate the memory of their ancestors. And several Noblemen having favour’d me with the perusal of their family evidences, and being recommended to the Right Honourable the present Earl of Exeter, his Lordship out of just regard to the memory of his great Ancestor, was pleased to order the manuscript Life of the Lord Burghley to be communicated to me.

Which being very old and decayed and only legible to such who are versed in ancient writings it was with great satisfaction that I copied it literatim. And that it may not be lost to the world, I now offer it to the view of the publick. It fully appears to be wrote in the reign of Queen Elizabeth soon after his Lordship’s death, by one who was intimate with him, and an eye witness of his actions for the last twenty-five years. It needs no comment to set it off; that truth and sincerity which shines through the whole, will, I don’t doubt have the same weight with the Readers as it had with me and that they will be of opinion it’s too valuable to be buried in oblivion.

This “Life of Lord Burghley” is referred to by Nares and other of his biographers as having been written by “a domestic.” It contains about 16,000 words and is the most authentic account extant of the great statesman’s life. The narrative is full, but the observations on the character and habits of Burghley are by far the most important feature. The method of treatment of the subject is after Bacon’s style; the Life abounds with phrases and with tricks of diction, which enable it to be identified as his. The concluding sentences could only have been written with Bacon’s pen: —

And so leaving his soule with God, his fame to the world, and the truth to all charitable mynds, I leave the sensure to all judicious Christians, who truly

practising what they professe, will better approve, and more indifferentlie interpret it, than envie or malice can disprove it. The best sort will ever doe right, the worst can but imagine mischief and doe wrong; yet this is a comfort, the more his virtues are troden downe, the more will theire brightnes appeare. Virtus vulnerata virescit.

In 1592 the “Responsio ad edictum Reginæ Angliæ” of the Jesuit Parsons had appeared, attacking the Queen and her advisers (especially Burghley), to whom were attributed all the evils of England and the disturbances of Christendom. The reply to this was entrusted to Francis Bacon, who responded with a pamphlet entitled “Certain observations upon a libel published this present year, 1592.” It was first printed by Dr. Rawley in the “Resuscitatio” in 1657. At the time it was written it was circulated largely in manuscript, for at least eight copies, somewhat varying from each other, have been preserved.[35] It is quite possible that it was printed at the time, but that no copy has survived. Throughout the whole work there are continual references to Burghley. Chapter VI. is entirely devoted to his defence and is headed “Certain true general notes upon the actions of the Lord Burghley.” Either “The Life” and the “Observations on a Libel” are by the same writer or the author of the former borrowed the latter very freely.

It is to be regretted that the original manuscript of the “Life” cannot now be found. In 1732 it was at Burghley House. Application has been made to the present Marquis of Exeter for permission to inspect it, but his Lordship’s librarian has no knowledge of its existence. If it could be examined it is probable that if the text was not in Bacon’s handwriting some notes or alterations might be recognised as his. The writer says he was an eye witness of Burghley’s life and actions twenty-five years together — that would be from 1573 to 1598, which would well accord with the present contention. If Bacon was the author it throws considerable light on his relations with Burghley and establishes the fact that they were of the most cordial and affectionate character. It is reported that Bacon said that in the time of the Burghleys — father and son — clever or able

men were repressed, and mainly upon this has been based the impression that Burghley opposed Francis Bacon's progress.

Burghley's biographer refers to this report. He writes: "He was careful and desirous to furder and advaunce men of quality and desart to be Councellors and officers to her Majesty wherein he placed manie and laboured to bring in more ... yet would envy with her slaunders report he hindered men from rising; but howe true it is wise men maie judge, for it was the Queene to take whom she pleased and not in a subject to preferree whom he listed."

It will eventually be proved that such a report conveys an incorrect view. In the letter of 1591,[36] addressed to Burghley, Bacon says:— "Besides I do not find in myself so much self-love, but that the greater parts of my thoughts are to deserve well (if I were able) of my friends and namely of your Lordship; who being the Atlas of this Commonwealth, the honour of my house, and the second founder of my poor estate, I am tied by all duties, both of a good patriot, and of an unworthy kinsman, and of an obliged servant, to employ whatsoever I am to do your service," and later in the letter he employs the phrase, "And if your Lordship will not carry me on," and then threatens to sell the inheritance that he has, purchase some quick revenue that may be executed by another, and become some sorry bookmaker or a pioneer in that mine of truth which Anaxagoras said lay so deep.

Again, in a letter to Burghley, dated 31st March, 1594, he says:— "Lastly, that howsoever this matter may go, yet I may enjoy your lordship's good favour and help as I have done in regard to my private estate, which as I have not altogether neglected so I have but negligently attended and which hath been bettered only by yourself (the Queen except) and not by any other in matter of importance." Further on he says: "Thus again desiring the continuance of your Lordship's goodness as I have hitherto found it on my part sought also to deserve, I commend," *etc.*

It is very easy, with little information as to Bacon's actions and little knowledge of the period, to form a definite opinion as to the relations of Bacon and Burghley. The more information as to the one and knowledge of the other

one gets, the more difficult does it become to arrive at a satisfactory conclusion. Here was the son of Elizabeth's great Lord Keeper, the nephew of her trusted minister, himself from his boyhood a *persona grata* with the Queen, of brilliant parts and great wisdom — if he had been a mere place-hunter his desires could have been satisfied over and over again. There was some condition of circumstance, of which nothing has hitherto been known, which prevented him from obtaining the object of his desires. That he had a definite object, and had mapped out a course by which he hoped to achieve it, is evident from his letters[37] already quoted. It is equally clear that the course he sought to pursue entailed his abandoning the law as a profession. Either he would only have such place as he desired, and on his own terms, or he was known to be following some course which, although not distasteful to his close friends, caused him to be held in suspicion, if not distrust, by the courtiers with whom Elizabeth was surrounded. Every additional fact that comes to light seems to point to the truth being that through his life Burghley was Francis Bacon's staunch friend and supporter. Upon Sir Nicholas Bacon's death Burghley appears with Bodley to have been maintaining Bacon in his travels abroad. Upon his return to England Burghley gave him financial support in his great project. In 1591 there was a crisis — someone had been spending money for the past twelve years freely in making English literature. That cannot be gainsaid. Burghley appears to have pulled up and remonstrated; hence Bacon's letter containing the threat before referred to. It is significant that it was immediately after this letter was written that Bacon's association with Essex commenced. Bacon would take him and Southampton into his confidence and seek their help. Essex was just the man to respond with enthusiasm. Francis introduced Anthony to him. The services of the brothers were placed at his disposal, and he undertook to manage the Queen. The office of Attorney-General for Francis would meet the case. "It was dangerous in a factious age to have my Lord Essex his favour," says the biographer before quoted.[38]

That Burghley was favourable to his appointment as Attorney-General two letters written by Francis to Lord Keeper Puckering in 1594 testify. In the first

Bacon writes: “I pray your Lordship to call to remembrance my Lord Treasurer’s kind course, who affirmed directly all the rest to be unfit. And because *vis unita fortior* I beg your Lordship to take a time with the Queen when my Lord Treasurer is present.”

In a second letter he writes: “I thought good to remember your good Lordship and to request you as I touched in my last that if my Lord Treasurer be absent your Lordship would forbear to fall into my business with her Majesty lest it mought receive some foil before the time when it should be resolutely dealt in.”

Only Burghley was found to support Essex’s advocacy, and on the whole this was not to be wondered at. Such an appointment, to say the least, would have been an experiment. Possibly Essex was the stumbling-block, but it may be that the real objection on the part of the Queen and her advisers was that Bacon was known to be so amorous of certain learned arts, so much given over to invention, that the consensus of opinion was that he was thereby unfitted to hold an important office of the State. Or it may be that he was discredited by his suspected or known association with certain printers. There was some reason of which no explanation can now be traced.

It has been suggested that in 1591 there was a crisis in Bacon’s life. That is evident from the letter to Burghley written in that year. John Harrington’s translation of “Orlando Furioso” was published about this time. The manuscript, which is in a perfect condition, is in the British Museum, and has been marked in Bacon’s handwriting throughout. The pagination and the printer’s signature are placed at the commencement of the stanzas to be printed on each page, and there are instructions to the printer at the end which are not in his hand.

There are good grounds for attributing the notes at the end of each chapter to Bacon.

It is very improbable that Sir John Harrington had the classical knowledge which the writer of these notes must have possessed. There is a letter written by him to Sir Amias Pawlett, dated January, 1606-7. He is relating an interview with King James, and says: “Then he (the king) enquyrede muche of lernynge and showede me his owne in such sorte as made me remember my examiner at

Cambridge aforetyme. He soughte muche to knowe my advances in philosophie and utterede profounde sentences of Aristotle and such lyke wryters, whiche I had never reade and which some are bolde enoughe to saye others do not understand." It would be difficult to mention any classical author with whose works the writer of these notes was not familiar, or to believe that "Epigrams both Pleasant and Serious" (1615) came from the pen of that writer.

At the end of the thirty-seventh chapter the following note occurs: "It was because she (Porcia) wrote some verses in manner of an Epitaph upon her husband after his decease: In which kind, that honourable Ladie (widow of the late Lord John Russell) deserveth no lesse commendation, having done as much for two husbands. And whereas my author maketh so great bost only of one learned woman in Italie, I may compare (besides one above all comparison that I have noted in the twentith booke) three or foure in England out of one family, and namely the sisters of that learned Ladie, as witness that verse written by the meanest of the foure to the Ladie Burlie which I doubt if Cambridge or Oxford can mend."

The four daughters of Sir Anthonie Cooke

—

Ladie Burlie,
Ladie Russell,
Lady Bacon,
Mistress Killygrew.

Si mihi quem cupio
cures Mildreda remitti
Tu bona, tu melior, tu
mihi sola soror;
Sin mali cessando
retines, & trans mare
mittis,
Tu mala, tu peior, tu
mihi nulla soror.
Is si Cornubiam, tibi

She wrote to Lady Burlie to send a kinsman of hers into Cornwall, where she dwelt, and to

pax sit & omnia læta,	stop his
Sin mare Ceciliæ	going
nuncio bella. Vale.[39]	beyond sea.

The writer of the Latin verse was *not* Ladie Russell, and it was written *to* Ladie Burlie, so she must either be Ladie Bacon or Mistress Killigrew. It is not an improbable theory that Ladie Bacon was writing to her sister Mildred, who had, through her husband, power either to send Francis to Cornwall or permit him to be sent away over the seas.

There is a copy of Machiavelli's "History of Florence," 1595, with Bacon's notes in the margins.[40]

At the end is a memorandum giving the dates when the book was read "in Cornwall at," and then follow two words, the second of which is "Lake," but the first is undecipherable.

Is it possible that Lady Anne Bacon had a house in Cornwall which Francis Bacon, inheriting after her death, was in the habit of visiting for retirement? But this is conjecture.

The following point is of interest. In the "Life of Burghley" (1598) it is said that: "Bookes weare so pleasing to him, as when he gott libertie to goe unto his house to take ayre, if he found a book worth the openinge, he wold rather loose his ridinge than his readinge; and yet ryding in his garden walks upon his litle moile was his greatest Disport: But so soone as he came in he fell to his readinge againe or els to dispatchinge busines."

Rawley, in his "Life of Bacon" (1657), attributes an exactly similar habit to the philosopher, and almost in identical phrase: "For he would ever interlace a moderate relaxation of his mind with his studies as walking, or taking the air abroad in his coach or some other befitting recreation; and yet he would lose no time, inasmuch as upon his first and immediate return he would fall to reading

again, and so suffer no moment of time to slip from him without some present improvement."

It is difficult to approach any phase of the life of Bacon without being confronted with what appears to be evidence of careful preparation to obscure the facts. This observation does not result from imagination or prejudice; Bacon's movements are always enshrouded in mystery. Investigation and research will, however, eventually establish as a fact that there was a closer connection between Burghley and Bacon than historians have recognised, and that they had a strong attachment for each other.

Chapter XVI. THE 1623 FOLIO EDITION OF SHAKESPEARE'S PLAYS.

Sir Sydney Lee has written[41]:— "As a specimen of typography, the First Folio is not to be commended. There are a great many contemporary folios of larger bulk far more neatly and correctly printed. It looks as though Jaggard's printing office was undermanned. The misprints are numerous, and are especially conspicuous in the pagination." In the same year was published "The Theater of Honour and Knighthood," translated from the French of Andreu Favine. William Jaggard was the printer. It is a large folio volume containing about 1,200 pages, and is referred to as being issued by Jaggard as an example of the printer's art to maintain his reputation, which had suffered from the apparently careless manner in which the Shakespeare Folio was turned out. Both books contain the same emblematic head-pieces and tail-pieces. There are, however, some considerable mispaginations in "The Theater of Honour." Mispaginations were not infrequent in Elizabethan and Jacobean literature, but it is quite possible that they were not unintentional. The most glaring instance is to be found in the first Edition of "The Two Bookes of Francis Bacon — Of the Proficience and Advancement in Learning, Divine and Humane," published by Henrie Tomes (1605). Each leaf (not page) is numbered. The 45 leaves of the first book are correctly numbered. In the second book there is no number on leaf 6. Leaf 9 is numbered 6, the right figure being printed upside down; 30 is numbered 33; from 31 to 70 the numbering is correct, and then the leaves are numbered as follows: — 70, 70, 71, 70, 72, 74, 73, 74, 75, 69, 77, 78, 79, 80, 77, 74, 74, 69, 69, 82, 87, 79, 89, 91, 92, 93, 94, 95, 99, 97, 99, 94, 100, 99, 102, 103, 103, 93, 106, and on correctly until the last page, 118, except that 115 is numbered 105.

It is impossible to attribute this mispagination to the printer's carelessness. This was the first work published bearing Bacon's name, excepting the trifle of essays published in 1597. There does not appear to have been any hurry in its production. It is quite a small volume, and yet the foregoing remarkable

mispaginations occur. There must be some purpose in this which has yet to be found out.

The 1623 Shakespeare Folio will be found to be one of the most perfect examples of the printer's art extant, because no work has been produced under such difficult conditions for the printer. There are few mistakes in pagination or spelling which are not intentional. The work is a masterpiece of enigma and cryptic design. The lines "To the Reader" opposite to the title-page are a table or code of numbers. The same lines and the lettering on the title-page form another table. The ingenuity displayed in this manipulation of words and numbers to create analogies is almost beyond the comprehension of the human mind. The mispaginations are all intentional and have cryptic meanings. The acme of wit is the substitution of 993 for 399 on the last page of the tragedies; a hundred has been omitted in "Hamlet," 257 following 156, and other errors made in order to obtain this result on the last page. The manner in which the printer's signatures have been arranged with the pages is equally wonderful. The name William Shakespeare must have been created without reference to him of Stratford, who possibly bore or had assigned to him a somewhat similar name. A great superstructure is built up on the exact spelling of the words William Shakespeare. The year 1623 was specially selected for the issue of the complete volume of the plays, because of the marvellous relations which the numbers composing it bear to the names William Shakespeare and Francis Bacon, to the year 1560, in which the birth of Bacon is registered, and to 1564 and 1616, the reputed dates of the birth and death of the Stratford man. Nor do the wonders end here. The use of numerical analogies has been carried into the construction of the English language. All this, and much more, will be made manifest when the work of Mr. E. V. Tanner comes to be investigated and appreciated. He has made the greatest literary discovery of all time. The wonder is how it has been possible for anyone to pierce the veil and reveal the secrets of the volume. The value of the Shakespeare Folio 1623 will be enhanced. It will stand alone as the greatest monument of the achievements of the human intellect.

To any literary critic who should honour this book by noticing it, it is probable the foregoing statements may seem extravagant and untrustworthy. To such the request is now made that before making any comment he will inspect the proof of the foregoing statements which are in the writer's possession. The dramas of Shakespeare are, by universal consent, placed at the head of all literature. The invitation is now put forth in explicit terms, and facilities are offered for the investigation of the truth, or otherwise, of every statement made in the foregoing paragraph.

Chapter XVII. THE AUTHORIZED VERSION OF THE BIBLE, 1611.

Is it not strange that there is no mention of any connection of Francis Bacon with this work? There was a conference held at Hampton Court Palace before King James on January, 1603, between the Episcopalians and Puritans. John Rainoldes urged the necessity of providing for his people a uniform translation of the Bible. Rainoldes was the leader of the Puritans, a person of prodigious reading and doctrine, and the very treasury of erudition. Dr. Hall, Bishop of Norwich, reports that "he alone was a well furnished library, full of all faculties, of all studies, of all learning — the memory and reading of that man were near a miracle." The King approved the suggestion and commissioned for that purpose fifty-four of the most learned men in the universities and other places. There was a "careful selection of revisers made by some unknown but very competent authority." The translators were divided into six bands of nine each, and the work of translation was apportioned out to them. A set of rules was drawn up for their guidance, which has happily come down to modern times — almost the only record that remains of this great undertaking. These concise rules have a homogeneity, breadth and vigour which point to Bacon as their author. Each reviser was to translate the whole of the original allocated to his company; then they were to compare their translations together, and, as soon as a company had completed its part, it was to communicate the result to the other companies, that nothing might pass without the general consent. If any company, upon the review of the translation so sent, differed on any point, they were to note their objection and state their reasons for disagreement. If the differences could not be adjusted, there was a committee of arbitration which met weekly, consisting of a representative from each company, to whom the matter in dispute was referred. If any point was found to be very obscure, letters were to be addressed, by authority, to learned persons throughout the land inviting their judgment. The work was commenced in 1604. Rainoldes belonged to the company to whom

Isaiah and the prophets were assigned. He died in 1607, before the work was completed. During his illness his colleagues met in his bedroom so that they might retain the benefit of his learning. Only forty-seven out of the fifty-four names are known. When the companies had completed their work, one complete copy was made at Oxford, one at Cambridge, and one at Westminster. Those were sent to London. Then two members were selected from each company to form a committee to review and polish the whole. The members met daily at Stationers' Hall and occupied nine months in their task. Then a final revision was entrusted to Dr. Thomas Bilson and Dr. Miles Smith, and in 1609 their labours were completed and the result was handed to the King. Many of the translators have left specimens of their writing in theological treatises, sermons, and other works. A careful perusal of all these available justifies the assertion that amongst the whole body there was not one man who was so great a literary stylist as to be able to write certain portions of the Authorised Version, which stamp it as one of the two greatest examples of the English language. Naturally the interest centres on Dr. Thomas Bilson and Dr. Miles Smith, to whom the final revision was entrusted. There are some nine or ten theological works by the former and two sermons by the latter. Unless the theory of a special divine inspiration for the occasion be admitted, it is clear that neither Bilson nor Miles Smith could have given the final touches to the Bible. And now a curious statement has come down to us. In 1609 the translators handed their work to the King, and in 1610 he returned it to them completed. James was incapable of writing anything to which the term beautiful could be applied. What had happened to the translators' work whilst it was left in his hands?

James had an officer of state at that time of whom a contemporary biographer wrote that "he had the contrivance of all King James his Designs, until the match with Spain." It will eventually be proved that the whole scheme of the Authorised Version of the Bible was Francis Bacon's. He was an ardent student not only of the Bible, but of the early manuscripts. St. Augustine, St. Jerome, and writers of theological works, were studied by him with industry. He has left his annotations in many copies of the Bible and in scores of theological works.

The translation must have been a work in which he took the deepest interest and which he would follow from stage to stage. When the last stage came there was only one writer of the period who was capable of turning the phrases with that matchless style which is the great charm of the Shakespeare plays. Whoever that stylist was, it was to him that James handed over the manuscripts which he received from the translators. That man then made havoc of much of the translation, but he produced a result which, on its literary merits, is without an equal.

Thirty years ago another revision took place, but, notwithstanding the advantages which the revisers of 1880 had over their predecessors of 1611, their version has failed to displace the older version, which is too precious to the hearts of the people for them to abandon it.

Although not one of the translators has left any literary work which would justify the belief that he was capable of writing the more beautiful portions of the Bible, fortunately Bacon has left an example which would rather add lustre to than decrease the high standard of the Bible if it were incorporated in it. As to the truth of this statement the reader must judge from the following prayer, which was written after his fall, and which was described by Addison as resembling the devotion of an angel rather than a man: —

Remember, O Lord, how Thy servant hath walked before Thee; remember what I have first sought, and what been principal in mine intentions. I have loved Thy assemblies; I have mourned for the divisions of Thy Church; I have delighted in the brightness of Thy sanctuary.

This vine, which Thy right hand hath planted in this nation, I have ever prayed unto Thee that it might have the first and the latter rain, and that it might stretch her branches to the seas and to the floods.

The state and bread of the poor and oppressed have been precious in mine eyes. I have hated all cruelty and hardness of heart. I have, though in a despised weed, procured the good of all men.

If any have been mine enemies, I thought not of them, neither hath the sun almost set upon my displeasure; but I have been as a dove, free from superfluity

of maliciousness.

Thy creatures have been my books, but Thy scriptures much more. I have sought Thee in the courts, fields, and gardens, but I have found Thee in Thy temples.

Thousand have been my sins and ten thousand my transgressions, but Thy sanctifications have remained with me, and my heart, through Thy grace, hath been an unquenched coal upon Thine altar.

O Lord, my strength, I have since my youth met with Thee in all my ways, by Thy fatherly compassions, by Thy comfortable chastisements, and by Thy most visible providence. As Thy favours have increased upon me, so have Thy corrections, so that Thou hast been ever near me, O Lord; and ever, as Thy worldly blessings were exalted, so secret darts from Thee have pierced me, and when I have ascended before men, I have descended in humiliation before Thee.

And now, when I thought most of peace and honour, Thy hand is heavy upon me, and hath humbled me according to Thy former lovingkindness, keeping me still in Thy fatherly school, not as a bastard but as a child. Just are Thy judgments upon me for my sins, which are more in number than the sands of the sea, but have no proportion to Thy mercies; for what are the sands of the sea to the sea? Earth, heavens, and all these are nothing to Thy mercies.

Besides my innumerable sins, I confess before Thee that I am debtor to Thee for the gracious talent of Thy gifts and graces, which I have neither put into a napkin, nor put it (as I ought) to exchangers, where it might have made most profit, but misspent it in things for which I was least fit so that I may truly say my soul hath been a stranger in the course of my pilgrimage.

Be merciful unto me, O Lord, for my Saviour's sake, and receive me into Thy bosom or guide me in Thy ways.

There is another feature about the first editions of the Authorised Version which arrests attention. In 1611 the first folio edition was published. The design with archers, dogs and rabbits which is to be found over the address "To the Christian Reader" which introduces the genealogies is also to be found in the folio edition of Shakespeare over the dedication to the most noble and

Incomparable paire of Brethren, over the Catalogue and elsewhere. Except that the mark of query which is on the head of the right hand pillar in the design in the Bible is missing in the Shakespeare folio, and the arrow which the archer on the right hand side is shooting contains a message in the design used in the Bible and is without one in the Shakespeare folio.

In the 1612 quarto edition of the Authorised Version on the title-page of the Genealogies are two designs; that at the head of the page is printed from the identical block which was used on the title-page of the first edition of "Venus and Adonis," 1593, and the first edition of "Lucrece," 1594. At the bottom is the design with the light A and dark A, which is over the dedication to Sir William Cecil in the "Arte of English Poesie," 1589. An octavo edition, which is now very rare, was also published in 1612. On the title-page of the Genealogies will be found the design with the light A and dark A which is used on several of the Shakespeare quartos and elsewhere. (Figure XXI.)

The selection of these designs was not made by chance. They were deliberately chosen to create similitudes between certain books, and mark their connection with each other.

The revised translation of the Bible was undertaken as a national work. It was carried out under the personal supervision of the King, but every record of the proceedings has disappeared. The British Museum does not contain a manuscript connected with the proceedings of the translators. In the Record Office have been preserved the original documents referring to important proceedings of that period. The parliamentary, judicial, and municipal records are, on the whole, in a complete condition, but ask for any records connected with the Authorised Version of the Bible and the reply is: "We have none." And yet it is reasonable to suppose that manuscripts and documents of such importance would be preserved. Where are they to be found?

Chapter XVIII. HOW BACON MARKED BOOKS WITH THE PUBLICATION OF WHICH HE WAS CONNECTED.

At a very early period in the history of printing, the custom was introduced of placing on title-pages, at the heads and ends of the chapters, emblematical designs. In English printed books these are seldom to be found until the latter half of the 16th century.

An investigation of the books of the period reveals the fact that the same blocks were used by different printers. Articles have been written on the migration of printer's blocks, but, so far, no explanation has been offered as to any object other than decoration for which these blocks were used.

Among other designs in use between 1576 and 1640 are a number of variants of a device in which a light A and a dark A form the most conspicuous points. Camden, in his "Remaines Concerning Britaine," 1614, commences a chapter on "Impresses," at the head of which the device is found, thus:— "An Imprese (as the Italians call it) is a device in picture with his Motto, or Word, borne by noble and learned personages, to notifie some particular conceit of their owne: as Emblemes (that we may omitte other differences) doe propound some general instructions to all." Then follow a number of examples, and amongst them this:—

"Variete and vicissitude of humane things he seemed to shew which parted his shield, Per Pale, Argent & Sables and counter-changeably writte in the Argent, Ater and in the Sables Albus."

But even if the light A and dark A are used in the design of the head-piece to represent Albus and Ater it does not afford any satisfactory explanation as to why they are so used.

In MDCXVI. was published “Les Emblemes Moraulx et Militaires du Sieur Jacob De Bruck Angermundt Nouvellement mis en Lumiere A Strasbourg, Par Jacob de Heyden Graveur.”

In Emblem No. 18, now reproduced, the light A and the dark A will be found in the branch of the tree which the man is about to cut off. (Figure VI.)[42]

Another Emblem does not contain the light A and dark A, but the bark of the trunk and branches of the tree on the design exhibit a strong contrast between the dark and light, which feature is represented in most of the title-pages of books in which the device is found. (Figure VII.)

Mr. Charles T. Jacob, Chiswick Press, London, who is the author of “Books and Printing” (London, 1902), and several works on typography, referring to an article on the migration of woodblocks, said: —

It is a well-known fact to Bibliographers that the same blocks were sometimes used by different printers in two places quite far apart, and at various intervals during the seventeenth and eighteenth centuries. That the same blocks were employed is apparent from a comparison of technical defects of impressions taken at different places, and at two periods. There was no method of duplication in existence until stereotyping was first invented in 1725; even then the details were somewhat crude, and the process being new, it met with much opposition and was practically not adopted until the early part of the nineteenth century. Electrotyping, which is the ideal method of reproducing woodblocks, was not introduced until 1836 or thereabouts. Of course, it was quite possible to re-engrave the same design, but absolute fidelity could not be relied on by these means, even if executed by the same hand.

The earliest date which appears on a book in which the head-piece, containing the device of the light A and dark A is found, is 1563. The book is “De Furtivis Literarum Notis Vulgo. De Ziferis,” Ioan. Baptista Porta Neapolitano Authore. Cum Privilegio Neapoli, apud Ioa. Mariam Scotum. MDLXIII. (Figure VIII.)

It is only used once — over the dedication Ioanni Soto Philippi Regis. There is no other head-piece in the book. John Baptist Porta was, with the exception of

Trithemius, whom he quotes, the first writer on cyphers. At the time at which he wrote cypher-writing was studied in every Court in Europe. It is significant that this emblematic device is used in the earliest period in which head-pieces were adopted, in a book which is descriptive and is in fact a text-book of the art of concealment. This has, however, now been proved to be a falsely dated book.

The first edition of this work was published in Naples in 1563 by Ioa. Marius Scotus, but this does not contain the A A design. In 1591 the book was published in London by John Wolfe; this reprint was dedicated to Henry Percy, Earl of Northumberland. After the edition had been printed off, the title-page was altered to correspond with the 1563 Naples publication. The dedication was taken out, and a reprint of the original dedication was substituted, and over this was placed the A A head-piece; then an edition was struck off, and, until to-day, it has been sold and re-sold as the first edition of Baptista Porta's work. It is difficult to offer any explanation as to why this fraud was committed.

The first occasion upon which this device was used appears to be in a book so rare that no copy of it can be found, either in the British Museum or the Bodleian Library. Unfortunately, in the copy belonging to the writer, the title-page and the two first pages are missing. The work is called "Hebraicum Alphabethum Jo. Bovlaese." It is a Hebrew Grammar, with proof-sheets added. It is interleaved with sheets of English-made paper, containing Bacon's handwriting. Bound up with it is another Hebrew Grammar, similarly interleaved, called "Sive compendium, quintacunque Ratione fieri potuit amplessimum, Totius linguæ," published in Paris in 1566. The book ends with the sentence: "Ex collegio Montis — Acuti 20 Decembris 1576"; then follow two pages in Hebrew, with the Latin translation over it, headed "Decem Præcepta decalogi Exod." Over this is the design containing the light A and the dark A, and the squirrel and rabbits. (Figure IX.) One thing is certain, that the copy now referred to was in the possession of Bacon, and that the interleaved sheets of paper contain his handwriting, in which have been added page by page the equivalents of the Hebrew in Greek, Chaldæic, Syriac and Arabic.

In 1577 Christophor Plantin published an edition of Andrea Alciat's "Emblemata." On page 104 is Emblem No. 45, "In dies meliora." This has been re-designed for the 1577 edition. It contains at the back the pillars of Hercules, with a scroll around bearing the motto: "Plus oltre." These pillars stand on some arches, immediately in front of which is a mound or pyramid, two sides of which are seen. On one is to be found the light A and on the other the dark A. The design was appropriated by Whitney, and appears on page 53 in the 1586 edition of his Emblems. From this time forth, A A devices are to be found in numbers of books published in England, and on some published on the Continent. Amongst the former are the first editions of "Venus and Adonis," "Lucrece," the "Sonnets," the quarto editions of Shakespeare's plays, the folio edition (1623) of his works, and the first quarto and octavo editions (1612) of the Authorised Version of the Bible.

There are fourteen distinct designs, in all of which, varying widely in other respects, the light A and the dark A constitute the outstanding figure. The use of the two letters so shaded must have had a special significance. In nearly every case it will be observed that the letter A is so drawn as to make the letter C on the inside. Was its significance of general knowledge amongst printers and readers, or was it an earmarking device used by one person, or by a Society?

A possible interpretation of the use of the light and dark shading, is that the book in which it is used contains more than is revealed; that is to say, the overt and the concealed.

A copy of "Æsopiphrygis vita et fabellæ cum latina interpretatione" exists, date 1517. The book is annotated by Bacon. On one side is the Greek text and on the opposite page the Latin translation. On pages 102 and 103 are two initial letters printed from blocks of the letter A. These are coloured so that the one on the left hand side is a light A, and that on the opposite page a dark A.

There are other designs which are used apparently as part of a scheme. The identical block (Figure X.) which was used at the top of the title page of "Venus and Adonis" (1593) and "Lucrece" (1594) did service on the title page of the Genealogies in the quarto edition of the Authorised Version of the Bible, 1612.

This design was, so far as can be traced, only used twice in the intervening nineteen years — on "An Apologie of the Earl of Essex to Master Anthony Bacon," penned by himself in 1598, and printed by Richard Bradocke in 1603, and in 1607, on the "World of Wonders," printed by Richard Field. It was of this book that Caldecott, the bibliophile and Shakespearean scholar, wrote: "The phraseology of Shakespeare is better illustrated in this work than in any other book existing." The design which is found on the title page of the "Sonnets of Shakespeare," 1609, is found also in the first edition of Napier's "Mirifici Logarithmorum," 1611, but printed from a different block. The design with archers shooting at the base of the central figure is to be found in a large number of the folio editions of the period. Amongst these are the Authorised Version of the Bible, 1611, the "Novum Organum," 1620, and the 1623 edition of Shakespeare's works.

There are other designs which are usually found accompanying the light A and dark A and the other devices before referred to.

These designs were first brought into use from 1576 and practically cease to appear about 1626. Afterwards they are seldom seen except in books bearing Bacon's name, and eventually they lapse. The last use of an A A device is over the life of the author in the second volume of an edition of Bacon's Essays edited by Dr. William Willymott, published by Henry Parson in 1720. After an interval of about 60 years a new design is made, which is not one of those employed by Bacon.

By means of these devices a certain number of books may be identified as forming a class by themselves.

There is another feature connected with them which is of special interest. One man appears to have contributed to all the books thus marked — either the dedication, the preface,[43] or the lines "To the Reader"; in some cases all three. It may be urged in opposition to this view that in those days there was a form in which dedications and prefaces were written, and that this was more or less followed by many writers, but this contention will not stand investigation. There are tricks of phrasing and other peculiarities which enable certain literary

productions to be identified as the work of one man. Some of the finest Elizabethan literature is to be found in the prefaces and dedications in these books.

The theory now put forth is that Francis Bacon was directing the production of a great quantity of the Elizabethan literature, and in every book in the production of which he was interested, he caused to be inserted one of these devices. He kept the blocks in his own custody; he sent them out to a printer when a book was approved by him for printing. On the completion of the work, the printer returned the blocks to Bacon so that they could be sent elsewhere by him as occasion required.

The most elaborate of the AA designs is Figure XII., and the writer has only found it in one volume. It is "Le Historie della Citta Di Fiorenza," by M. Jacopo, published in Lyons by Theobald Ancelin in 1582.

"Exact was his correspondence abroad and at home, constant his Letters, frequent his Visits, great his obligations," states the contemporary biographer, speaking of Francis Bacon. It is difficult to arrive at the exact meaning of these words. There is little correspondence with those abroad remaining, no record of visits, no particulars of the great obligations into which he entered. In the dedication of the 1631 edition of the "Histoire Naturelle" to Monseigneur de Chasteauneuf, the author speaking of Bacon writes:— "Le Chancelier, qu'on a fait venir tant de fois en France, n'a point encore quitté l'Angleterre avec tant de passion de nous découvrir ses merveilles que depuis qu'il a sceu le rang dont on avoit reconnu vos vertus."

These frequent visits to France are unrecorded elsewhere, but here is definite testimony that they were made.

There are good grounds for believing that Bacon was throughout his life, until their deaths, in constant communication with Christophor Plantin (1514-1589), Aldus Manutius, Henry Stephen (1528-1598), and also with Robert Stephens the third (1563-1640). All these men were not only printers, but brilliant scholars and writers. If search be made, it is quite possible that correspondence or other evidence of their friendship may come to light. Be that as it may, there were

undoubtedly a number of books published on the continent between 1576 and 1630 which in the sparta upon them bear testimony to Bacon's association with their publication.

The following are instances of where the several designs which are reproduced may be found. They however occur in many other volumes.

Figure IX. — "The Arte of English Poesie," 1589.

" XIII. — "Orlando Furioso," 1607.

" XIV. — Spencer's "Fairie Queen."

" XV. — "Florentine History translation," 1595, and 1636 edition of Barclay's "Argenis."

" XI. — "Sonnets."

" XVI. — Simon Pateriche's translation of "Discourse against Machiavel."

" XVII. — Lodge's translation of "Seneca," 1614.

" XVIII. — Shakespeare Folio, 1623.

" XIX. — "Dæmonologie," 1603.

" XX. Alciat's "Emblems," published in

— Paris, 1584.

Chapter XIX. BACON AND EMBLEMATA.

In “Shakespeare and the Emblem Writers” the Rev. Henry Green endeavours to show the similarities of thought and expression between the great poet and the authors of Emblemata, but the line of enquiry which he there opened does not appear to have been followed by subsequent writers. To-day the Emblemata literature is a *terra incognita* except to a very few students, and yet it is full of interest, romance, and mystery. Emblem literature may be said to have had its origin with Andrea Alciat, the celebrated Italian jurisconsult, who was famous for his great knowledge and power of mind. In 1522 he published at Milan an “Emblematum Libellus,” or Little Book of Emblems. Green says: “It established, if it did not introduce, a new style of emblem literature, the classical in the place of the simply grotesque and humorous, or of the heraldic and mythic.” The first edition now known to exist was published at Augsburg in 1531, a small octavo containing eighty-eight pages with ninety-seven emblems, and as many woodcuts. It was from time to time augmented, and passed through many editions. For some years the Emblemata appears to have been produced chiefly by Italians, with a few Frenchmen. Until the last half of the sixteenth century the output of books of this character was not large. Thenceforth for the next hundred years the creation of emblems became a popular form of literary exercise. The Italians continued to be prolific, but Dutch, French, and German scholars were but little behind them. There were a few Englishmen and Spaniards who also practised the art.

In 1905 was published a book called “Letters from the Dead to the Dead,” by Oliver Lector. In it attention is drawn to the remarkable features of some of the books on emblems printed during Bacon’s life, and to the evidence that he was in some manner connected with the publication of many of these volumes. The author claims this to be especially the case with the “Emblemata Moralia et Bellica,” 1615, of Jacob de Bruck, of Angermundt, and the “Emblemata Ethic Politica” of J. Bornitius.

The emblem pictures for the most part appear to be picture puzzles. In the "Critique upon the Mythology of the Ancients" Bacon says: —

"It may pass for a farther indication of a concealed and secret meaning, that some of these fables are so absurd and idle in their narration as to proclaim and shew an allegory afar off. A fable that carries probability with it may be supposed invented for pleasure, or in imitation of history; but, those that would never be conceived or related in this way, must surely have a different use."

If this line of reasoning be applied to the illustrations in the emblem books, it is clear that they conceal some hidden meaning, for they are apparently unintelligible, and the accompanying letterpress does not afford any illumination.

Jean Baudoin was the translator of Bacon's "Essaies" into the French language (1626). Baudoin published in 1638-9 "Recueil D'Emblèmes divers avec des Discours Moraux, Philos. et Polit." In the preface he says: "Le grand chancelier Bacon m'ayant fait naître l'envie de travailler à ces emblèmes ... m'en a fourni les principaux que j'ai tirés de l'explication ingénieuse qu'il a donnée de quelques fables et de ses autres ouvrages." Here is definite evidence of Bacon's association with a book of emblems.

The first volume of Emblemata in which traces of Bacon's hand are to be found is the 1577 edition of Alciat's "Emblems," published by the Plantin Press, with notes by Claude Mignault. It is in this edition, in Emblem No. 45, "In dies meliora," that for the first time the light A and the dark A is to be found. In previous editions this device is absent. For this volume a new design has been engraved in which it appears.

In the emblem books written in Italian Bacon does not appear to have been concerned, unless an exception be made of Ripa's "Iconologia," a copy of which contains his handwriting and initials. In some way he had control of a large number of those written in Latin, and bearing names of Dutch, French, and some Italian authors, and also of several written in Dutch and of the English writers. The field is a very wide one, and only a few of the principal examples can be mentioned.

The most important work is the “Emblemata Moralia et Bellica” of Jacob à Bruck, of Angermundt, 1615. “Argentorati per Jacobum ab Heyden.” With many of the designs in this volume Oliver Lector has dealt fully in “Letters from the Dead to the Dead,”[44] before referred to. There is another volume bearing the name of Jacob à Bruck, published in 1598. Only one copy of this book is known to be in existence, and that is in the Royal Library of St. Petersburg.

The “Emblemata Ethico Politica of Jacobus Bornitius, 1659, Moguntiæ,” is remarkable because many of the engravings contain portraits of Bacon, namely, in Sylloge Prima, Plates Nos. vii., xxiii., xliv., xlv., xlvix.; and in Sylloge II., Plates ix. and xxxvi. Oliver Lector says: “I have not met with an earlier edition of Bornitius than 1659. My conjecture, however, is that the manuscript came into the hands of Gruter with other of Bacon’s published by him in the year 1653.”

There are two productions of Janus Jacobus Boissardus in which Bacon’s hand may be recognised— “Emblèmes Latines avec l’Interprétation Françoise du I. Pierre Ioly Messin. Metis, 1588,” and “Emblematum liber. Ipsa Emblemata ab Auctore delineata: a Theodoro de Bry sculpta et nunc recens in lucem edita,” 1593, Frankfort. Two editions of the latter were printed in the same year. The title-pages are identical, and the same plates have been used throughout, but the letterpress is in Latin in the one, and in French in the other. In both, the dedications are addressed in French to Madame de Clervent, Baronne de Coppet, *etc.* The dedication of the former bears the name Jan Jacques Boissard at the head, and addresses the lady as “que come estes addonnée à la speculation des choses qui appartiennent à l’instruction de l’âme.” The dedication of the latter is signed Ioly, who explains that he has translated the verses into French, so that they may be of more service to the dedicatee.

Otho Van Veen enjoys the distinction of having had Rubens for a disciple. A considerable number of emblem books emanated from him. In 1608 were published at Antwerp two editions of his “Amorum Emblemata.” In one copy the verses are in Latin, German, and French, and in the other in Latin, English, and Italian. There are commendatory verses in the latter, two of which are by

Daniel Heinsius and R. V., who was Robert Verstegen, the author of "A Restitution of Decayed Intelligence in Antiquities." The dedication is "To the most honourable and worthie brothers William Earle of Pembroke, and Phillip Earle of Montgomerie, patrons of learning and chevalrie," who are "the most noble and incomparable paire of brethren" to whom the 1623 Shakespeare Folio was dedicated. In this volume Bacon has left his marks.

"Emblemata door Zacharias Heyns," published in Rotterdam in 1625, comprises four books bound together. The inscriptions over the plates are in Latin. The letterpress, which is in Dutch and French, apparently bears very little reference to the illustrations.

Johannis de Brunes I.C. Emblemata of Sinne-Werck, Amsterdam, 1624, is written in Dutch. Emblem VIII. contains an indication that the number 1623 is a key.

The "Silenus Alcibiades sive Proteus" was published at Middleburgh in 1618. There is no author's name on the title-page, but the Voor-reden, written in Dutch, is signed J. Cats. Attached to two of the preliminary complimentary verses are the names of Daniel Heyns and Josuah Sylvester, the translator of "Du Bartas." The verses are in Latin, Dutch, and French. Immediately following the title-page is a preface in Latin, signed by Majores de Baptis. Over this is the familiar emblem containing the archers, rabbits, and dogs, with the note of query on the right-hand side, and the message on the arrow. This volume is one of the most remarkable of the emblem books. The Latin preface is autobiographical. If the writer can be identified as the author of "Venus and Adonis," it becomes one of the most important contributions to his biography.

In 1616, the year of Shakespeare's death, was published at Amsterdam a book bearing on its title-page the inscription: "Cornelii Giselberti Plempii Amsterodamum Monogrammon." It contains fifty illustrations, with Latin verses attached. Emblem I. is reproduced (Fig. V.) On reference to it, it will be seen that Fortune stands on a globe, and with one hand is pushing off from the pinnacle of fame a man dressed as a player with a feather in his hat; with the other hand she is raising up a man who is wearing the Bacon hat, but whose face

is hidden. The prophecy expressed by the emblem is now being fulfilled. It will be seen that the initial letters of each word in the sentence of the letterpress — Obscænùmque nimis crepuit, Fortuna Batavis appellanda — yield F. Bacon. Bacon's portrait is found in several of the illustrations in this book. Other emblem writers whose works bear traces of Bacon's co-operation are G. Rollenhagen, J. Camerius, J. Typotius, D. Hensius.

Fig. V.

Fig. V.

En Fortuna: manu quos rupem ducit in altam,
Præcipites abigit: carnificina Dea est.
Firma globo imponi voluerunt fata caducam,
Ipsa quoquè ut posset risus, & esse iocus.
Olim unctos Salÿ qui præsilière per utres,

Ridebant caderet si qua puella malè.
O quàm sæpe sales, plausumque merente ruinâ,
Erubuit vitium fors inhonest a suum!
Obscænùmque nimis crepuit, Fortuna Batavis
Appellanda; sono, quo sua curta vocant.
Quoque sono veteres olim sua furta Latini:
Vt nec, Homere, mali nomen odoris ames.

There yet remain to be mentioned two English emblem writers. A "Choice of Emblems" by Geffrey Whitney was published in 1586 by Francis Raphelengius in the house of Christopher Plantin at Leyden. The dedication is to Robert Earle of Leicester. There are only from fifteen to twenty original designs out of 166 illustrations. The remainder are taken from other emblem writers, chiefly from Alciat, Sambucus, Paradin, and Hadrian Junius. On page 53 is the design headed "In dies meliora" found in the 1577 edition of Alciat, but the letterpress, which is in English, is quite different from the Latin verse attached to it in the Alciat.

The "Minerva Britanna" of Henry Peacham was published in 1612. The emblem on the title-page[45] represents the great secret of Francis Bacon's life, and on page ·33 is an emblem in which the name Shakespeare is represented. The volume is full of devices which will amply repay a careful study.

Apart from any connection which Bacon may have had with this remarkable class of books, they are of great interest to the student of the Elizabethan and Jacobean periods. They contain pictorial representations full of information as to the habits and customs of the people. With the exception of Whitney's "Choice of Emblems," a facsimile reprint of which was published in 1866, edited by the Rev. Henry Green, no reprint of any of these curious books has been issued. As the original editions of many of them are very rare, and of none of them plentiful, their study is a matter of difficulty, and few students find their way to this fascinating field of research. How close Bacon's connection was with the writers of these books, or with their publishers, it is difficult to say, but there is

considerable evidence that in some way he was able to introduce into every one of the books here enumerated, and many others, some plates illustrative of his inductive philosophy.

Chapter XX. SHAKESPEARE'S SONNETS.

"Shakespeare's Sonnets never before Imprinted," have afforded commentators material for many volumes filled with theories which to the ordinary critical mind appear to have no foundation in fact. Chapters have been written to prove that Mr. W. H., the only begetter of the Sonnets, was Henry Wriothesley, Earl of Southampton, and chapters have been written to prove that he was no such person, but that William Herbert, Earl of Pembroke, was the man intended to be designated. Theories have been elaborated to identify the individuals represented by the Rival Poet and the dark Lady. Not one of these theories is supported by the vestige of a shred of testimony that would stand investigation. There has not come down any evidence that Shakspur, of Stratford, knew either the Earl of Southampton, the Earl of Pembroke or Marie Fitton. The truth is that Mr. W. H. was *Shakespeare*, who *was* the only begetter of the Sonnets, and the proof of this statement will in due time be forthcoming. It may be well to try and read some of the Sonnets as they stand and endeavour to realise what is the obvious meaning of the printed words.

The key to the Sonnets will be found in No. 62. The language in which it is written is explicit and capable of being understood by any ordinary intellect.

"Sinne of selfe-love possesseth al mine eie
And all my soule, and al my every part;
And for this sinne there is no remedie,
It is so grounded inward in my heart.
Me thinkes no face so gratious is as mine,
No shape so true, no truth of such account,
And for my selfe mine owne worth do define,
As I all other in all worth's surmount
But when my glasse shewes me my selfe indeed
Beated and chopt with tand antiquitie,
Mine own selfe love quite contrary I read

Mine own selfe love quite contrary I read
Selfe, so selfe loving were iniquity.
Tis thee (myselfe) that for myself I praise
Painting my age with beauty of thy daies."

The writer here states definitely that he is dominated by the sin of self-love; it possesseth his eye, his soul, and every part of him. There can be found no remedy for it; it is so grounded in his heart. No face is so gracious as is his, no shape so true, no truth of such account. He defines his worth as surmounting that of all others. This is the frank expression of a man who not only believed that he was, but knew that he was superior to all his contemporaries, not only in intellectual power, but in personal appearance. Then comes an arrest in the thought, and he realises that time has been at work. He has been picturing himself as he was when a young man. He turns to his glass and sees himself beated and chopt with tanned antiquity; forty summers have passed over his brow.[46]

Francis Bacon at forty years of age, or thereabouts, unmarried, childless, sits down to his table, Hilliard's portrait before him, with pen in hand, full of self-love, full of admiration for that beautiful youth on whose counterfeit presentment he is gazing. His intellectual triumphs pass in review before him, most of them known only to himself and that youth — his companion through life. That was the Francis Bacon who controlled him in all his comings and goings — his ideal whom he worshipped. If he could have a son like that boy! His pen begins to move on the paper —

"From fairest creatures we desire increase
That thereby beauty's rose might never die,
But as the riper should by time decrease
His tender heire might bear his memory."

The pen stops and the writer's eye wanders to the miniature: —
"But *thou*[47] contracted to thine own bright eyes."

And so the Sonnets flow on, without effort, without the need of reference to authorities, for the great, fixed and methodical memory needs none.

How natural are the allusions —

“Thou art thy mother’s glasse and she in thee
Calls backe the lovely Aprill of her prime.”

“Be as thy presence is, gracious and kind,
Or to thyselfe at least kind hearted prove.
Make thee another self, for love of me
That beauty may still live in thine or thee.”

“Let those whom nature hath not made for store,
Harsh, featureless and rude, barrenly perish;
Look, whom she best indow’d she gave the more;
Which bountious guift thou shouldst in bounty cherrish;
She carv’d thee for her seale, and ment therby
Thou shouldst print more, not let that coppy die.”

“O that you were yourselfe, but love you are
No longer yours, then you yourselfe here live,
Against this cunning end you should prepare,
And your sweet semblance to some other give
. . . . . .
Who lets so faire a house fall to decay
. . . . . .

O none but unthrifts, deare my love you know
You had a Father, let your Son say so.”

“But wherefore do not you a mightier waie
Make warre uppon this bloodie tirant Time?
And fortifie your selfe in your decay
With meanes more blessed, then my barren rime?
Now stand you on the top of happie houres
And many maiden gardens, yet onset,
With virtuous wish would beare you living flowers
Much liker than your painted counterfeit:

Who will beleeve my verses in time to come
If it were fil’d with your most high deserts?
Though yet heaven knows, it is but as a tombe
Which hides your life, and shewes not halfe your parts:
If I could write the beauty of your eyes
And in fresh numbers number all your graces,
The age to come would say this Poet lies,
Such heavenly touches nere toucht earthly faces.
So should my papers (yellowed with their age)
Be scorn’d, like old men of lesse truth than tongue,
And your true rights be termd a Poets rage
And stretched miter of an Antique song.
But were some childe of yours alive that time,
You should live twise, in it and in my rime.”

“Yet doe thy worst, ould Time, dispight thy wrong
My love shall in my verse ever live young.”

He realises that he no longer answers Ophelia’s description:

“The courtier’s, soldier’s, scholar’s eye, tongue, sword:
The expectancy and rose of the fair state
The glass of fashion and the mould of form,
The observed of all observers....
That unmatch’d form and feature of blown youth.”

But he cannot forget what he has been, he cannot realise that he is no longer the brilliant youth whose miniature he has before him, with the words inscribed around, “Si tabula daretur digna animum mallem” — If materials could be found worthy to paint his mind (“O could he but have drawn his wit”) and then with a burst of poetic enthusiasm he exclaims: —

“Tis thee (myselfe) that for myselfe I praise,
Painting my age with beauty of thy daies.”

This is the common experience of a man as he advances in life. So long as he does not see his reflection in a glass, if he tries to visualize himself, he sees the youth or young man. Only in his most pessimistic moments does he realise his age.

There is no longer any difficulty in understanding Shakespeare’s Sonnets. They were addressed by “Shakespeare,” the poet, to the marvellous youth who was known under the name of Francis Bacon, and they were written, with Hilliard’s portrait placed on his table before him.

In that age (please God it may be the present age), which is known only to God and to the fates when the finishing touch shall be given to Bacon’s fame,[48] it will be found that the period of his life from twelve to thirty-five years of age

surpassed all others, not only in brilliant intellectual achievements, but for the enduring wealth with which he endowed his countrymen. And yet it was part of his scheme of life that his connection with the great renaissance in English literature should lie hidden until posterity should recognise that work as the fruit of his brain:— "Mente Videbor"— "by the mind I shall be seen."

How lacking all his modern biographers have been in perception!

Every difficulty in those which are termed the procreation Sonnets disappears with the application of this key. Only by it can Sonnet 22 be made intelligible: —

"My glass shall not persuade me I am old,
As long as youth and thou are of one date;
But when in thee time's furrow I behold,
Then look, I death my days would expirate
For all that beauty that doth cover thee
Is but the steady raiment of my heart.
Which in my breast doth live, as thine in me.
How can I then be older than thou art?
O, therefore, love, be of thyself so wary
As I, not for myself, but for thee will;
Bearing thy heart, which I will keep so chary
As tender nurse her babe from faring ill.
Presume not on thy heart when mine is slain;
Thou gavest me thine, not to give back again."

But nearly every Sonnet might be quoted in support of this view. Especially is it of value in bringing an intelligent and allowable explanation to Sonnets 40, 41, and 42, which now no longer have an unsavoury flavour.

Sonnet No. 59 is most noteworthy, because it implies a belief in re-incarnation. Shakespeare expresses his longing to know what the ancients would have said of his marvellous intellect. If he could find his picture in some antique

book over 500 years old, see an image of himself as he then was, and learn what men thought of him!

"If their bee nothing new, but that which is
Hath beene before, how are our braines begulld,
Which laboring for invention, beare amisse
The second burthen of a former child?
Oh that record could with a back-ward looke,
Even of five hundredth courses of the Sunne,
Show me your image in some antique booke,
Since minde at first in carrecter was done,
That I might see what the old world could say
To this composed wonder of your frame;
Whether we are mended, or where better they,
Or whether revolution be the same.
Oh sure I am, the wits of former daies,
To subjects worse have given admiring praise."

There is the same idea in Sonnet 71, which suggests that in some future re-incarnation Bacon might read Shakespeare's praises of him.

Conjectures as to who was the rival poet may be dispensed with. The following rendering of Sonnet No. 80 makes this perfectly clear: —

"O how I (*the poet*) faint when I of you (*F.B.*) do write,
Knowing a better spirit (*that of the philosopher*) doth use your name
And in the praise thereof spends all his might
To make me tongue tied, speaking of your fame!
(*Shakespeare never refers to Bacon or vice-versa*)
But since your (*F.B.'s*) worth wide as the ocean is,
The humble as the proudest sail doth bear,
My saucy bark (*that of the poet*) inferior far to his (*that of the philosopher*),

On your broad main doth wilfully appear.
Your shallowest help will hold me (*the poet*) up afloat
Whilst he (*the philosopher*) upon your soundless deep doth ride."

It is impossible to do justice to this subject in the space here available. By the aid of this key every line becomes intelligible. The charm and beauty of the Sonnets are increased tenfold. Every unpleasant association of them is removed. No longer need Browning say, "If so the less Shakespeare he."

These are not "Shakespeare's sug'rd[49] Sonnets amongst his private friends" to which Meres makes reference. They are to be found elsewhere.

If there had been an intelligent study of Elizabethan literature from original sources the authorship of the Sonnets would have been revealed long ago. It was a habit of Bacon to speak of himself as some one apart from the speaker. The opening sentence of *Filum Labyrinthi, Sivo Forma Inquisitiones* is an example. *Ad Filios*— "Francis Bacon thought in this manner." Prefixed to the preface to Gilbert Wats' interpretation of the "Advancement of Learning" is a chapter commencing, "Francis Lo Verulam consulted thus: and thus concluded with himselfe. The publication whereof he conceived did concern the present and future age."

Nothing that has been written is more perfectly Baconian in style and temperament than are the Sonnets. They breathe out his hopes, his aspirations, his ideals, his fears, in every line. He knew he was not for his time. He knew future generations only would render him the fame to which his incomparable powers entitled him. He knew how far he towered above his contemporaries, aye, and his predecessors, in intellectual power. His hopes were fixed on that day in the distant future — to-day — when for the first time the meshes which he wove, behind which his life's work is obscured, are beginning to be unravelled.

The most sanguine Baconian, in his most enthusiastic moments, must fail adequately to appreciate the achievements of Francis Bacon and the obligations under which he has placed posterity. But Bacon knew — and he alone knew — their full value. It was fitting that the greatest poet which the world had produced

should in matchless verse do honour to the world's greatest intellect. It was a pretty conceit. Only a master mind would dare to make the attempt. The result has afforded another example of how his great wit, in being concealed, was revealed.

Chapter XXI. BACON'S LIBRARY.

In the "Advancement of Learning" Bacon refers to the annotations of books as being deficient. There was living at the end of the sixteenth and beginning of the seventeenth century a scholar through whose hands at least several thousand books passed. He appears to have made a practice of annotating in the margins every book he read. The chief purpose, however, of the notes, apparently, was to aid the memory, for in some books nearly every name occurring in the text is carried into the margin without comment. The notes are also accompanied by scrolls, marks, and brackets, which support the contention that they are the work of one man. The annotation of books was not a common practice then, nor has it been since. If a reader takes up a hundred books in a second-hand book shop he will probably not find more than one containing manuscript notes, and not one in five hundred in which the annotations have been systematically carried through. There does not appear to have been any other scholar living at that time, with the exception of this one, who was persistently making marginal notes on the books he read.

Spedding writes: "What became of his (Bacon's) books, which were left to Sir John Constable and must have contained traces of his reading, we do not know; but very few appear to have survived."

Mrs. Pott, in "Francis Bacon and his Secret Society," draws attention to the mystery as to the disappearance of Bacon's library. "Which is a mystery," she adds, "although the world has been content to take it very apathetically. Where is Bacon's library? Undoubtedly the books exist and are traceable. We should expect them to be recognisable by marginal notes; yet those notes, whether in pencil or in ink, may have been effaced. If annotated, Bacon and his friends would not wish his books to attract public attention." And further on: "It is probable that the latter (*i.e.*, the books) will seldom or never be found to bear his name or signature." And again: "Yet it may reasonably be anticipated that some at least are 'noted in the margin,' or that some will be found with traces of marks

which were guides to the transcriber or amanuensis as to the portions which were to be copied for future use in Bacon's collections or book of commonplaces." Mrs. Pott's words were written in a spirit of true prophecy.

The collecting together of these books originated with that distinguished Baconian scholar, Mr. W. M. Safford. For years past he has been steadily engaged in reconstituting Bacon's Library. The writer has had the privilege of being associated with him in this work during the past three years. A collection of nearly two thousand volumes has been gathered together. The annotations on the margins of these books are unquestionably the work of one man, and that man, or rather boy and man, was undoubtedly Francis Bacon. The books bear date from 1470 to 1620. It is impossible to enumerate them all here, but they include the works of Seneca, Aristotle, Plato, Horace, Alciat, Lucanus, Dionysius, Catullus, Lactinius, Plutarch, Pliny, Aristophanes, Plautus, Cornelius Agrippa, Cicero, Vitruvius, Euclid, Virgil, Ovid, Lucretius, Apuleius, Salust, Tibullus, Isocrates, and hundreds of other classical writers; St. Augustine, St. Jerome, Calvin, Beza, Beda, Erasmus, Martin Luther, J. Cammerarius, Sir Thomas Moore, Machiavelli, and other more modern writers.

The handwriting varies,[50] but there is a particular hand which is found accompanied by a boy's sketches. There are drawings of full-length figures, heads of men and women, animals, birds, reptiles, ships, castles, cathedrals, cities, battles, storms, *etc.* The writing is a strong, clerkly student's hand. There is a passage in "Hamlet," Act V., scene ii., which is noteworthy. Hamlet, speaking to Horatio, says: —

"I sat me down
Devised a new commission; wrote it fair;
I once did hold it, as our statists do,
A baseness to write fair, and labour'd much
How to forget that learning; but, Sir, now
It did me yeomans service."

The nature of this statement is so personal that it could only have been written as the result of experience. Hamlet had been taught, when young, to write a hand so fair that he was capable of producing a fresh commission which would pass muster as the work of a Court copyist. The annotation of these books possessed the same qualification. In the margins of these books are abundant references in handwriting to the whole range of classical authors.

A copy of the "Grammatice Compendium" of Lactus Pomponius, a very rare book printed by De Fortis in Venice in 1484, contains on the margins the boy's scribble and drawings, besides a number of manuscript notes. It bears traces of his reading probably at eight years of age. A large folio volume entitled "T. Livii Palvini Latinæ Historiæ Principis Decades Tres," published by Frobenius in 1535, is a treasure. It is most copiously annotated and embellished with sketches. The notes are usually in Latin, but interspersed with Greek and sometimes with English. Obviously the writer thought in Latin, and the character of the drawings justifies the assumption that, at the time, his age would be from ten to fourteen years.

The most remarkable reference to these annotations is to be found in the "Rape of Lucrece." The fifteenth stanza is as follows: —

"But she that never cop't with straunger eies,
Could picke no meaning from their parling lookes,
Nor read the subtle shining secrecies
Writ in the glassie margents of such bookes,
Shee toucht no unknown baits, nor feared no hooks,
Nor could shee moralize his wanton sight
More than his eies were opend to the light."

It would be difficult to conceive a more inappropriate simile for the lustful looks in Tarquin's eyes than "the subtle shining secrecies, writ in the glassie margents of such books." That this is lugged in for a purpose outside the object

of the poem is manifest. How many readers of "Lucrece" would know of such a practice? Nay. If it did exist, was not its use very rare?

But the margin of the verse itself yields a subtle shining secret! The initial letters of the lines are B, C, N, W, Sh, N, M. It is only necessary to supply the vowels — BACoN, W. Sh., NaMe. Sh is on line 103, which is the numerical value of the word Shakespeare. The numerical value of Bacon is 33. In view of this the line 33 is significant:— "Why is Colatine the publisher?" The use of the word *publisher* here is quite inappropriate. It is introduced for some reason outside the purpose of the text.

The "Rape of Lucrece" commences with Bacon's monogram and, as the late Rev. Walter Begley pointed out, ends with his signature.

The theory now advanced is that when Bacon read a book he made marginal notes in it — the object being mainly to assist his memory, but the critical notes are numerous. It does not follow that all these books constituted his library. He would read a book and it having served his purpose he would dispose of it. Some books no doubt he would retain and these would form his library.

The annotations are chiefly in Latin, but some are in Greek, some in Hebrew, French and Spanish. When these have been examined and translated the meaning of the phrase that he had taken all knowledge to be his province will be better understood. Rawley says: "He read much and that with great judgment and rejection of impertinences incident to many authors."

The writer having examined annotations, many and varied, of books in his library, and having enjoyed the privilege of free access to those collected by Mr. Safford, ventures to assert that much of the ripe learning of the Shakespeare plays can be traced therein to its proper origin. Amongst the former is a copy of Alciat's Emblems, 1577, in the early part profusely annotated. Ben Jonson in his "Discoveries" has incorporated the translation of a portion of one of the Emblems and *has also incorporated a portion of the annotations from this very book.*

Chapter XXII. TWO GERMAN OPINIONS ON SHAKESPEARE AND BACON.

Dr. G. G. Gervinus, the eminent German Historian and Professor Extraordinary at Heidelberg, published in 1849 his work, “Shakespeare Commentaries.” This was years before any suggestion had been made that Bacon was in any way connected with the authorship of the Shakespearean dramas.

In the Prospectus of “The New Shakespeare Society,” written in 1873, Dr. F. J. Furnivall says: —

“The profound and generous ‘Commentaries’ of Gervinus — an honour to a German to have written, a pleasure to an Englishman to read — is still the only book known to me that comes near the true treatment and the dignity of its subject, or can be put into the hands of the student who wants to know the mind of Shakespeare.”

The book abounds with references to Bacon. From the Preface to the last chapter Gervinus appears to have Bacon continually suggested to him by the thoughts and words of Shakespeare.

In the Preface, after speaking of the value accruing to German literature by naturalizing Shakespeare “even at the risk of casting our own poets still further in the shade,” he says: —

“A similar benefit would it be to our intellectual life if his famed contemporary, Bacon, were revived in a suitable manner, in order to counterbalance the idealistic philosophy of Germany. For both these, the poet as well as the philosopher, having looked deeply into the history and politics of their people, stand upon the level ground of reality, notwithstanding the high art of the one and the speculative notions of the other. By the healthfulness of their own mind they influence the healthfulness of others, while in their most ideal and most abstract representations they aim at a preparation for life *as it is* — for *that* life which forms the exclusive subject of all political action.”

In the chapter on “His Age,” written prior to 1849, the Professor pours out the results of a profound study of the writings attributed to both men in the following remarkable sentences: —

“Judge then how natural it was that England, if not the birthplace of the drama, should be that of dramatic legislature. Yet even this instance of favourable concentration is not the last. Both in philosophy and poetry everything conspired, as it were, throughout this prosperous period, in favour of two great minds, Shakespeare and Bacon; all competitors vanished from their side, and they could give forth laws for art and science which it is incumbent even upon present ages to fulfil. As the revived philosophy, which in the former century in Germany was divided among many, but in England at that time was the possession of a single man, so poetry also found one exclusive heir, compared with whom those later born could claim but little.

“That Shakespeare’s appearance upon a soil so admirably prepared was neither marvellous nor accidental is evidenced even by the corresponding appearance of such a contemporary as Bacon. Scarcely can anything be said of Shakespeare’s position generally with regard to mediæval poetry which does not also bear upon the position of the renovator Bacon with regard to mediæval philosophy. Neither knew nor mentioned the other, although Bacon was almost called upon to have done so in his remarks upon the theatre of his day. It may be presumed that Shakespeare liked Bacon but little, if he knew his writings and life; that he liked not his ostentation, which, without on the whole interfering with his modesty, recurred too often in many instances; that he liked not the fault-finding which his ill-health might have caused, nor the narrow-mindedness with which he pronounced the histrionic art to be infamous, although he allowed that the ancients regarded the drama as a school for virtue; nor the theoretic precepts of worldly wisdom which he gave forth; nor, lastly, the practical career which he lived. Before his mind, however, if he had fathomed it, he must have bent in reverence. For just as Shakespeare was an interpreter of the secrets of history and of human nature, Bacon was an interpreter of lifeless nature. Just as Shakespeare went from instance to instance in his judgment of moral actions,

and never founded a law on single experience, so did Bacon in natural science avoid leaping from one experience of the senses to general principles; he spoke of this with blame as anticipating nature; and Shakespeare, in the same way, would have called the conventionalities in the poetry of the Southern races an anticipation of human nature. In the scholastic science of the middle ages, as in the chivalric poetry of the romantic period, approbation and not truth was sought for, and with one accord Shakespeare's poetry and Bacon's science were equally opposed to this. As Shakespeare balanced the one-sided errors of the imagination by reason, reality, and nature, so Bacon led philosophy away from the one-sided errors of reason to experience; both with one stroke, renovated the two branches of science and poetry by this renewed bond with nature; both, disregarding all by-ways, staked everything upon this 'victory in the race between art and nature.' Just as Bacon with his new philosophy is linked with the natural science of Greece and Rome, and then with the latter period of philosophy in western Europe, so Shakespeare's drama stands in relation to the comedies of Plautus and to the stage of his own day; between the two there lay a vast wilderness of time, as unfruitful for the drama as for philosophy. But while they thus led back to nature, Bacon was yet as little of an empiric, in the common sense, as Shakespeare was a poet of nature. Bacon prophesied that if hereafter his commendation of experience should prevail, great danger to science would arise from the other extreme, and Shakespeare even in his own day could perceive the same with respect to his poetry; Bacon, therefore, insisted on the closest union between experience and reason, just as Shakespeare effected that between reality and imagination. While they thus bid adieu to the formalities of ancient art and science, Shakespeare to conceits and taffeta-phrases, Bacon to logic and syllogisms, yet at times it occurred that the one fell back into the subtleties of the old school, and the other into the constrained wit of the Italian style. Bacon felt himself quite an original in that which was his peculiar merit, and so was Shakespeare; the one in the method of science he had laid down, and in his suggestions for its execution, the other in the poetical works he had executed, and in the suggestions of their new law. Bacon, looking back to the waymarks he

had left for others, said with pride that his words required a century for their demonstration and several for their execution; and so too it has demanded two centuries to understand Shakespeare, but very little has ever been executed in his sense. And at the same time we have mentioned what deep modesty was interwoven in both with their self-reliance, so that the words which Bacon liked to quote hold good for the two works:— 'The kingdom of God cometh not with observation.' Both reached this height from the one starting point, that Shakespeare despised the million, and Bacon feared with Phocion the applause of the multitude. Both are alike in the rare impartiality with which they avoided everything one-sided; in Bacon we find, indeed, youthful exercises in which he endeavoured in severe contrasts to contemplate a series of things from two points of view. Both, therefore, have an equal hatred of sects and parties; Bacon of sophists and dogmatic philosophers, Shakespeare of Puritans and zealots. Both, therefore, are equally free from prejudices, and from astrological superstition in dreams and omens. Bacon says of the alchemists and magicians in natural science that they stand in similar relation to true knowledge as the deeds of Amadis to those of Cæsar, and so does Shakespeare's true poetry stand in relation to the fantastic romance of Amadis. Just as Bacon banished religion from science, so did Shakespeare from Art; and when the former complained that the teachers of religion were against natural philosophy, they were equally against the stage. From Bacon's example it seems clear that Shakespeare left religious matters unnoticed on the same grounds as himself, and took the path of morality in worldly things; in both this has been equally misconstrued, and Le Maistre has proved Bacon's lack of Christianity, as Birch has done that of Shakespeare. Shakespeare would, perhaps, have looked down just as contemptuously on the ancients and their arts as Bacon did on their philosophy and natural science, and both on the same grounds; they boasted of the greater age of the world, of more enlarged knowledge of heaven, earth, and mankind. Neither stooped before authorities, and an injustice similar to that which Bacon committed against Aristotle, Shakespeare *perhaps* has done to Homer. In both a similar combination of different mental powers was at work; and as Shakespeare

was often involuntarily philosophical in his profoundness, Bacon was not seldom surprised into the imagination of the poet. Just as Bacon, although he declared knowledge in itself to be much more valuable than the use of invention, insisted throughout generally and dispassionately upon the practical use of philosophy, so Shakespeare's poetry, independent as was his sense of art, aimed throughout at bearing upon the moral life. Bacon himself was of the same opinion; he was not far from declaring history to be the best teacher of politics, and poetry the best instructor in morals. Both were alike deeply moved by the picture of a ruling Nemesis, whom they saw, grand and powerful, striding through history and life, dragging the mightiest and most prosperous as a sacrifice to her altar, as the victims of their own inward nature and destiny. In Bacon's works we find a multitude of moral sayings and maxims of experience, from which the most striking mottoes might be drawn for every Shakespearian play, aye, for every one of his principal characters (we have already brought forward not a few proofs of this), testifying to a remarkable harmony in their mutual comprehension of human nature. Both, in their systems of morality rendering homage to Aristotle, whose ethics Shakespeare, from a passage in Troilus, may have read, arrived at the same end as he did — that virtue lies in a just medium between two extremes. Shakespeare would also have agreed with *him* in this, that Bacon declared excess to be 'the fault of youth, as defect is of age;' he accounted 'defect the worst, because excess contains some sparks of magnanimity, and, like a bird, claims kindred of the heavens, while defect, only like a base worm, crawls upon the earth.' In these maxims lie at once, as it were, the whole theory of Shakespeare's dramatic forms and of his moral philosophy."

Dr. Kuno Fischer, the distinguished German critic and historian of philosophy, in a volume on Bacon, published in 1856, writes: —

The same affinity for the Roman mind, and the same want of sympathy with the Greek, we again find in Bacon's greatest contemporary, whose imagination took as broad and comprehensive a view as Bacon's intellect. Indeed, how could a Bacon attain that position with respect to Greek poetry that was unattainable by the mighty imagination of a Shakspeare? For in Shakspeare, at any rate, the

imagination of the Greek antiquity could be met by a homogeneous power of the same rank as itself; and, as the old adage says, “like comes to like.” But the age, the spirit of the nation — in a word, all those forces of which the genius of an individual man is composed, and which, moreover, genius is least able to resist — had here placed an obstacle, impenetrable both to the poet and the philosopher. Shakspeare was no more able to exhibit Greek characters than Bacon to expound Greek poetry. Like Bacon, Shakspeare had in his turn of mind something that was Roman, and not at all akin to the Greek. He could appropriate to himself a Coriolanus and a Brutus, a Cæsar and an Antony; he could succeed with the Roman heroes of Plutarch, but not with the Greek heroes of Homer. The latter he could only parody, but his parody was as infelicitous as Bacon’s explanation of the “Wisdom of the Ancients.” Those must be dazzled critics indeed who can persuade themselves that the heroes of the Iliad are excelled by the caricatures in “Troilus and Cressida.” The success of such a parody was poetically impossible; indeed, he that attempts to parody Homer shows thereby that he has not understood him. For the simple and the naïve do not admit of a parody, and these have found in Homer their eternal and inimitable expression. Just as well might caricatures be made of the statues of Phidias. Where the creative imagination never ceases to be simple and naïve, where it never distorts itself by the affected or the unnatural, there is the consecrated land of poetry, in which there is no place for the parodist. On the other hand, where there is a palpable want of simplicity and nature, parody is perfectly conceivable; nay, may even be felt as a poetical necessity. Thus Euripides, who, often enough, was neither simple nor naïve, could be parodied, and Aristophanes has shown us with what felicity. Even Æschylus, who was not always as simple as he was grand, does not completely escape the parodising test. But Homer is safe. To parody Homer is to mistake him, and to stand so far beyond his scope that the truth and magic of his poetry can no longer be felt; and this is the position of Shakespeare and Bacon. The imagination of Homer, and all that could be contemplated and felt by that imagination, namely, the classical antiquity of the Greeks, are to them utterly foreign. We cannot understand

Aristotle without Plato; nay, I maintain that we cannot contemplate with a sympathetic mind the Platonic world of ideas, if we have not previously sympathised with the world of the Homeric gods. Be it understood, I speak of the *form* of the Platonic mind, not of its logical matter; in point of doctrine, the Homeric faith was no more that of Plato than of Phidias. But these doctrinal or logical differences are far less than the formal and æsthetical affinity. The conceptions of Plato are of Homeric origin.

This want of ability to take an historical survey of the world is to be found alike in Bacon and Shakspeare, together with many excellencies likewise common to them both. To the parallel between them — which Gervinus, with his peculiar talent for combination, has drawn in the concluding remarks to his "Shakespeare," and has illustrated by a series of appropriate instances — belongs the similar relation of both to antiquity, their affinity to the Roman mind, and their diversity from the Greek. Both possessed to an eminent degree that faculty for a knowledge of human nature that at once pre-supposes and calls forth an interest in practical life and historical reality. To this interest corresponds the stage, on which the Roman characters moved; and here Bacon and Shakspeare met, brought together by a common interest in these objects, and the attempt to depict and copy them. This point of agreement, more than any other argument, explains their affinity. At the same time there is no evidence that one ever came into actual contact with the other. Bacon does not even mention Shakspeare when he discourses of dramatic poetry, but passes over this department of poetry with a general and superficial remark that relates less to the subject itself than to the stage and its uses. As far as his own age is concerned, he sets down the moral value of the stage as exceedingly trifling. But the affinity of Bacon to Shakspeare is to be sought in his moral and psychological, not in his æsthetical views, which are too much regulated by material interests and utilitarian prepossessions to be applicable to art itself, considered with reference to its own independent value. However, even in these there is nothing to prevent Bacon's manner of judging mankind, and apprehending characters from agreeing perfectly with that of Shakspeare; so that human life, the subject-matter of all

dramatic art, appeared to him much as it appeared to the great artist himself, who, in giving form to this matter, excelled all others. Is not the inexhaustible theme of Shakspeare's poetry the history and course of human passion? In the treatment of this especial theme is not Shakspeare the greatest of all poets — nay, is he not unique among them all? And it is this very theme that is proposed by Bacon as the chief problem of moral philosophy. He blames Aristotle for treating of the passions in his rhetoric rather than his ethics; for regarding the artificial means of exciting them rather than their natural history. It is to the natural history of the human passions that Bacon directs the attention of philosophy. He does not find any knowledge of them among the sciences of his time. "The poets and writers of histories," he says, "are the best doctors of this knowledge; where we may find painted forth with great life how passions are kindled and incited; and how pacified and refrained; and how again contained from act and further degree; how they disclose themselves; how they work; how they vary; how they gather and fortify; how they are inwrapped one within another; and how they do fight and encounter one with another; and other the like particularities."[51] Such a lively description is required by Bacon from moral philosophy. That is to say, he desired nothing less than a natural history of the passions — the very thing that Shakspeare has produced. Indeed, what poet could have excelled Shakspeare in this respect? Who, to use a Baconian expression, could have depicted man and all his passions more *ad vivum*? According to Bacon, the poets and historians give us copies of characters; and the outlines of these images — the simple strokes that determine characters — are the proper objects of ethical science. Just as physical science requires a dissection of bodies, that their hidden qualities and parts may be discovered, so should ethics penetrate the various minds of men, in order to find out the eternal basis of them all. And not only this foundation, but likewise those external conditions which give a stamp to human character — all those peculiarities that "are imposed upon the mind by the sex, by the age, by the region, by health and sickness, by beauty and deformity, and the like, which are inherent and not external; and, again, those which are caused by external fortune"[52] — should

come within the scope of ethical philosophy. In a word, Bacon would have man studied in his individuality as a product of nature and history, in every respect determined by natural and historical influences, by internal and external conditions. And exactly in the same spirit has Shakespeare understood man and his destiny; regarding character as the result of a certain natural temperament and a certain historical position, and destiny as a result of character.

Chapter XXIII. THE TESTIMONY OF BACON'S CONTEMPORARIES.

A distinguished member of the Bench in a recent post-prandial address referred to Bacon as "a shady lawyer." Irresponsible newspaper correspondents, when attacking the Baconian theory, indulge in epithets of this kind, but it is amazing that any man occupying a position so responsible as that of an English judge should, either through ignorance or with a desire to be considered a wit, make use of such a term.

Whatever may have been Francis Bacon's faults, one fact must stand unchallenged — that amongst those of his contemporaries who knew him there was a consensus of opinion that his virtues overshadowed any failings to which he might be subject.

The following testimonies establish this fact: —

Let Ben Jonson speak first:

"Yet there happened in my time one noble speaker, who was full of gravity in his speaking. His language (where he could spare or pass a jest) was nobly censorious. No man ever spake more neatly, more pressly, more weightily, or suffered less emptiness, less idleness, in what he uttered. No member of his speech, but consisted of his own graces. His hearers could not cough, or look aside from him, without loss. He commanded where he spoke; and had his judges angry and pleased at his devotion. No man had their affections more in his power. The fear of every man that heard him was, lest he should make an end," and, after referring to Lord Ellesmere, Jonson continues: —

"But his learned and able (though unfortunate) successor, (*i.e.*, Bacon) is he who hath filled up all numbers, and performed that in our tongue, which may be compared or preferred either to insolent Greece, or haughty Rome. In short, within his view, and about his times, were all the wits born, that could honour a language, or help study. Now things daily fall, wits grow downward, and

eloquence grows backward: so that he may be named, and stand as the mark and άκωη of our language.

"My conceit of his person was never increased toward him by his place, or honours: but I have and do reverence him, for the greatness that was only proper to himself, in that he seemed to me ever, by his work, one of the greatest men, and most worthy of admiration, that had been in many ages. In his adversity I ever prayed God would give him strength; for greatness he could not want. Neither could I condole in a word or syllable for him, as knowing no accident could do harm to virtue, but rather help to make it manifest."

Sir Toby Matthew describes Francis Bacon as

"A friend unalterable to his friends;
A man most sweet in his conversation and ways";

and adds:

"It is not his greatness that I admire, but his virtue."

Thomas Bushel, his servant, in a letter to Mr. John Eliot, printed in 1628, in a volume called "The First Part of Youth's Errors," says:

"Yet lest the calumnious tongues of men might extenuate the good opinion you had of his worth and merit, I must ingenuously confess that my selfe and others of his servants were the occasion of exhaling his vertues into a darke exlipse; which God knowes would have long endured both for the honour of his King and the good of the Commonaltie; had not we whom his bountie nursed, laid on his guiltlesse shoulders our base and execrable deeds to be scand and censured by the whole senate of a state, where no sooner sentence was given, but most of us forsoke him, which makes us bear the badge of Jewes to this day. Yet I am confident there were some Godly Daniels amongst us.... As for myselfe, with shame I must acquit the title, and pleade guilty; which grieves my very soule, that so matchlesse a Peer should be lost by such insinuating caterpillars, who in his owne nature scorn'd the least thought of any base, unworthy, or ignoble act, though subject to infirmites as ordained to the wisest."

In Fuller's "Worthies" it is written:

"He was a rich Cabinet filled with Judgment, Wit, Fancy and Memory, and had the golden Key, Elocution, to open it. He was singular in singulis, in every Science and Art, and being In-at-all came off with Credit. He was too Bountifull to his Servants, and either too confident of their Honesty, or too conniving at their Falsehood. 'Tis said he had 2 Servants, one in all Causes Patron to the Plaintiff, the other to the Defendant, but taking bribes of both, with this Condition, to restore the Mony received, if the Cause went against them. Such practices, tho' unknown to their Master, cost him the loss of his Office."

In "The Lives of Statesmen and Favourites of Elizabeth's Reign" it is said: —

"His religion was rational and sober, his spirit publick, his love to relations tender, to Friends faithful, to the hopeful liberal, to men universal, to his very Enemies civil. He left the best pattern of Government in his actions under one king and the best principles of it in the Life of the other."

The following is a translation from the discourse on the life of Mr. Francis Bacon which is prefixed to the "Histoire Naturelle," by Piere Amboise, published in Paris in 1631:

"Among so many virtues that made this great man commendable, prudence, as the first of all the moral virtues, and that most necessary to those of his profession, was that which shone in him the most brightly. His profound wisdom can be most readily seen in his books, and his matchless fidelity in the signal services that he continuously rendered to his Prince. Never was there man who so loved equity, or so enthusiastically worked for the public good as he; so that I may aver that he would have been much better suited to a Republic than to a Monarchy, where frequently the convenience of the Prince is more thought of than that of his people. And I do not doubt that had he lived in a Republic he would have acquired as much glory from the citizens as formerly did Aristides and Cato, the one in Athens, the other in Rome. Innocence oppressed found always in his protection a sure refuge, and the position of the great gave them no vantage ground before the Chancellor when suing for justice.

“Vanity, avarice, and ambition, vices that too often attach themselves to great honours, were to him quite unknown, and if he did a good action it was not from the desire of fame, but simply because he could not do otherwise. His good qualities were entirely pure, without being clouded by the admixture of any imperfections, and the passions that form usually the defects in great men in him only served to bring out his virtues; if he felt hatred and rage it was only against evil-doers, to shew his detestation of their crimes, and success or failure in the affairs of his country brought to him the greater part of his joys or his sorrows. He was as truly a good man as he was an upright judge, and by the example of his life corrected vice and bad living as much as by pains and penalties. And, in a word, it seemed that Nature had exempted from the ordinary frailities of men him whom she had marked out to deal with their crimes. All these good qualities made him the darling of the people and prized by the great ones of the State. But when it seemed that nothing could destroy his position, Fortune made clear that she did not yet wish to abandon her character for instability, and that Bacon had too much worth to remain so long prosperous. It thus came about that amongst the great number of officials such as a man of his position must have in his house, there was one who was accused before Parliament of exaction, and of having sold the influence that he might have with his master. And though the probity of Mr. Bacon was entirely exempt from censure, nevertheless he was declared guilty of the crime of his servant and was deprived of the power that he had so long exercised with so much honour and glory. In this I see the working of monstrous ingratitude and unparalleled cruelty — to say that a man who could mark the years of his life rather by the signal services that he had rendered to the State than by times or seasons, should have received such hard usage for the punishment of a crime which he never committed; England, indeed, teaches us by this that the sea that surrounds her shores imparts to her inhabitants somewhat of its restless inconstancy. This storm did not at all surprise him, and he received the news of his disgrace with a countenance so undisturbed that it was easy to see that he thought but little of the sweets of life since the loss of them caused

him discomfort so slight." Thus ended this great man whom England could place alone as the equal of the best of all the previous centuries."

Peter Boener, who was private apothecary to Bacon for a time, wrote in 1647 a Life, of portions of which the following are translations: —

"But how runneth man's future. He who seemed to occupy the highest rank is alas! by envious tongues near King and Parliament deposed from all his offices and chancellorship, little considering what treasure was being cast in the mire, as afterwards the issue and result thereof have shown in that country. But he always comforted himself with the words of Scripture — nihil est novi; that means 'there is nothing new.' Because so is Cicero by Octavianus; Calisthenes by Alexander; Seneca (all his former teachers) by Nero; yea, Ovid, Lucanus, Statius (together with many others), for a small cause very unthankfully the one banished, the other killed, the third thrown to the lions. But even as for such men banishment is freedom — death their life, so is for this author his deposition a memory to greater honour and fame, and to such a sage no harm can come.

"Whilst his fortunes were so changed, I never saw him — either in mien, word or acts — changed or disturbed towards whomsoever; *ira enim hominis non implet justitiam Dei*, he was ever one and the same, both in sorrow and in joy, as becometh a philosopher; always with a benevolent allocution — *manus nostræ sunt oculatæ, credunt quod vident*.... A noteworthy example and pattern for everyone of all virtue, gentleness, peacefulness, and patience."

Francis Osborn, in his "Advice to a Son," writes: —

"And my memory neither doth nor (I believe possible ever) can direct me towards an example more splendid in this kind, than the Lord Bacon Earl of St. Albans, who in all companies did appear a good Proficient, if not a Master in those Arts entertained for the Subject of every ones discourse. So as I dare maintain, without the least affectation of Flattery or Hyperbole, That his most casual talk deserveth to be written, As I have been told his first or foulest Copys required no great Labour to render them competent for the nicest judgments. A

high perfection, attainable only by use, and treating with every man in his respective profession, and what he was most vers'd in. So as I have heard him entertain a Country Lord in the proper terms relating to Hawks and Dogs. And at another time out-Cant a London Chirurgeon. Thus he did not only learn himself, but gratifie such as taught him; who looked upon their Callings as honoured through his Notice; Nor did an easie falling into Arguments (not unjustly taken for a blemish in the most) appear less than an ornament in Him: The ears of the hearers receiving more gratification, than trouble; And (so) no less sorry when he came to conclude, than displeased with any did interrupt him. Now this general Knowledge he had in all things, husbanded by his wit, and dignifi'd by so Majestical a carriage he was known to own, strook such an awful reverence in those he question'd, that they durst not conceal the most intrinsick part of their Mysteries from him, for fear of appearing Ignorant, or Saucy. All which rendered him no less Necessary, than admirable at the Council Table, where in reference to Impositions, Monopolies, &c. the meanest Manufacturers were an usual Argument: And, as I have heard, did in this Baffle, the Earl of Middlesex, that was born and bred a Citizen &c. Yet without any great (if at all) interrupting his other Studies, as is not hard to be Imagined of a quick Apprehension, in which he was Admirable."

Chapter XXIV. THE MISSING FOURTH PART OF "THE GREAT INSTAURATION."

It has been urged by critics that Bacon, whilst professing to take all knowledge for his province, ignored one-half of it — that half which was a knowledge of himself; that to him the external world was everything, the internal nothing. All that Nature revealed was external; nothing that was internal was of much importance.

It must be remembered that all that we have of Bacon's was written as he was passing into the "vale of life." Of his early productions nothing has come down to the present times under his own name. The following extracts from his acknowledged works establish two facts: — (1) That the foregoing criticism is unfounded, for he placed the study of man's mind and character above all other enquiries. (2) That he had prepared examples, being "actual types and models, by which the entire process of the mind and the whole fabric and order of invention from the beginning to the end in certain subjects and those various and remarkable should be set, as it were, before the eyes." Where are these works to be found?

Bacon never tires of quoting from the Roman poet the line —

"Omne tulit punctum qui miscuit utile dulci,"

which, in an Elizabethan handwriting, may be seen in a contemporary volume thus rendered —

"He of all others fittest is to write
Which with some profit allso ioynes delight."

He repeats in different forms, until the reiteration becomes almost tedious, the following incident: —

“And as Alexander Borgia was wont to say, of the expedition of the French for Naples, that they came with chalk in their hands to marke up their lodgings not with weapons to fight; so we like better, that entry of truth, which comes peaceably where the Mindes of men, capable to lodge so great a guest, are signed, as it were, with chalke; than that which comes with Pugnacity, and forceth itselfe a way by contentions and controversies.”

The same idea is embodied in the following example of the antitheta: —

“A witty conceit is oftentimes a convoy of a Truth which otherwise could not so handsomely have been ferried over.”

In the “Advancement of Learning,” Lib. II., again the same view is insisted on: —

“Besides in all wise humane Government, they that sit at the helme, doe more happily bring their purposes about, and insinuate more easily things fit for the people, by pretexts, and oblique courses; than by downe-right dealing. Nay (which perchance may seem very strange) in things meerely naturall, you may sooner deceive nature, than force her; so improper, and selfe impeaching are open direct proceedings; whereas on the other side, an oblique and an insinuing way, gently glides along and compasseth the intended effect.”

One other fact must be realised before the full import of the quotations about to be made can be appreciated. In the “Distributio Operis” prefixed to the “Novum Organum” the following significant passage occurs[53]: —

“For as often as I have occasion to report anything as deficient, the nature of which is at all obscure, so that men may not perhaps easily understand what I mean or what the work is which I have in my head, I shall always (provided it be a matter of any worth) take care to subjoin either directions for the execution of such work, or else a portion of the work itself executed by myself as a sample of the whole: thus giving assistance in every case either by work or by counsel.”

In the “Advancement of Learning,” Book II., chap. i., it is written:

“That is the truest Partition of humane Learning, which hath reference to the three Faculties of Man’s soule, which is the feat of Learning. History is referred

to Memory, Poesy to the Imagination, Philosophy to Reason. By Poesy, in this place, we understand nothing else, but feigned History, or Fables. As for Verse, that is only a style of expression, and pertaines to the Art of Elocution, of which in due place."

"Poesy, in that sense we have expounded it, is likewise of Individuals, fancied to the similitude of those things which in true History are recorded, yet so as often it exceeds measure; and those things which in Nature would never meet, nor come to passe, Poesy composeth and introduceth at pleasure, even as Painting doth: which indeed is the work of the Imagination."

And in the same book, Chapter XIII.: —

"Drammaticall, or Representative Poesy, which brings the World upon the stage, is of excellent use, if it were not abused. For the Instructions, and Corruptions, of the Stage, may be great; but the corruptions in this kind abound, the Discipline is altogether neglected in our times. For although in moderne Commonwealths, Stage-plaies be but estimed a sport or pastime, unlesse it draw from the Satyre, and be mordant; yet the care of the Ancients was, that it should instruct the minds of men unto virtue. Nay, wise men and great Philosophers, have accounted it, as the Archet, or musicall Bow of the Mind. And certainly it is most true, and as it were, a secret of nature, that the minds of men are more patent to affections, and impressions, Congregate, than solitary."

The third chapter of Book VII. of the "De Augmentis" is devoted to emphasising the importance of a knowledge of the internal working of the mind and of the disposition and character of men. The following extracts are of special moment: —

"Some are naturally formed for contemplation, others for business, others for war, others for advancement of fortune, others for love, others for the arts, others for a varied kind of life; so among the poets (heroic, satiric, tragic, comic) are everywhere interspersed, representations of characters, though generally exaggerated and surpassing the truth. And this argument touching the different characters of dispositions is one of those subjects in which the common

discourse of men (as sometimes, though very rarely, happens) is wiser than books."

The drama as the only vehicle through which this can be accomplished at once suggests itself to the reader. But in order to emphasize this point he proceeds —

"But far the best provision and material for this treatise is to be gained from the wiser sort of historians, not only from the commemorations which they commonly add on recording the deaths of illustrious persons, but much more from the entire body of history as often as such a person enters upon the stage."

Bacon becomes still more explicit. He continues: —

"Wherefore out of these materials (which are surely rich and abundant) let a full and careful treatise be constructed. Not, however, that I would have their characters presented in ethics (as we find them in history, or poetry, or even in common discourse) in the shape of complete individual portraits, but rather the several features and simple lineaments of which they are composed, and by the various combinations and arrangements of which all characters whatever are made up, showing how many, and of what nature these are, and how connected and subordinated one to another; that so we may have a scientific and accurate dissection of minds and characters, and the secret dispositions of particular men may be revealed; and that from a knowledge thereof better rules may be framed for the treatment of the mind. And not only should the characters of dispositions which are impressed by nature be received into this treatise, but those also which are imposed upon the mind by sex, by age, by region, by health and sickness, by beauty and deformity and the like; and again, those which are caused by fortune, as sovereignty, nobility, obscure birth, riches, want, magistracy, privateness, prosperity, adversity and the like."

Shortly after follows this remarkable pronouncement.

"But to speak the truth the poets and writers of history are the best doctors of this knowledge,[54] where we may find painted forth with great life and dissected, how affections are kindled and excited, and how pacified and restrained, and how again contained from act and further degree; how they disclose themselves,

though repressed and concealed; how they work; how they vary; how they are enwrapped one within another; how they fight and encounter one with another; and many more particulars of this kind; amongst which this last is of special use in moral and civil matters; how, I say, to set affection against affection, and to use the aid of one to master another; like hunters and fowlers who use to hunt beast with beast, and catch bird with bird, which otherwise perhaps without their aid man of himself could not so easily contrive; upon which foundation is erected that excellent and general use in civil government of reward and punishment, whereon commonwealths lean; seeing these predominant affections of fear and hope suppress and bridle all the rest. For as in the government of States it is sometimes necessary to bridle one faction with another, so is it in the internal government of the mind."

In his "Distributio Operis" Bacon thus describes the missing fourth part of his "Instauratio Magna": —

"Of these the first is to set forth examples of inquiry and invention[55] according to my method exhibited by anticipation in some particular subjects; choosing such subjects as are at once the most noble in themselves among those under enquiry, and most different one from another, that there may be an example in every kind. I do not speak of these precepts and rules by way of illustration (for of these I have given plenty in the second part of the work); but I mean actual types and models, by which the entire process of the mind and the whole fabric and order of invention from the beginning to the end in certain subjects, and those various and remarkable, should be set as it were before the eyes. For I remember that in the mathematics it is easy to follow the demonstration when you have a machine beside you, whereas, without that help, all appears involved and more subtle than it really is. To examples of this kind — being, in fact, nothing more than an application of the second part in detail and at large — the fourth part of the work is devoted."

The late Mr. Edwin Reed has, in his "Francis Bacon our Shakespeare," page 126, drawn attention to a remarkable circumstance. In 1607 Bacon had written his "Cogitata et Visa," which was the forerunner of his "Novum Organum." It

was not published until twenty-seven years after his death, namely, in 1653, by Isaac Gruter, at Leyden. In 1857 Mr. Spedding found a manuscript copy of the "Cogitata" in the library of Queen's College at Oxford. This manuscript had been corrected in Bacon's own handwriting. It contained passages which were omitted from Gruter's print. Spedding did not realise the importance of the omitted passages, but Mr. Edwin Reed has made this manifest. The following extract is specially noteworthy, the portion printed in italics having been omitted by Gruter: —

"... So he thought best, after long considering the subject and weighing it carefully, first of all to prepare *Tabulæ Inveniendi* or regular forms of inquiry; in other words, a mass of particulars arranged for the understanding, and to serve, as it were, for an example and almost visible representation of the matter. For nothing else can be devised that would place in a clearer light what is true and what is false, or show more plainly that what is presented is more than words, and must be avoided by anyone who either has no confidence in his own scheme or may wish to have his scheme taken for more than it is worth.

"*But when these Tabulæ Inveniendi have been put forth and seen, he does not doubt that the more timid wits will shrink almost in despair from imitating them with similar productions with other materials or on other subjects; and they will take so much delight in the specimen given that they will miss the precepts in it. Still, many persons will be led to inquire into the real meaning and highest use of these writings, and to find the key to their interpretation, and thus more ardently desire, in some degree at least, to acquire the new aspect of nature which such a key will reveal. But he intends, yielding neither to his own personal aspirations nor to the wishes of others, but keeping steadily in view the success of his undertaking, having shared these writings with some, to withhold the rest until the treatise intended for the people shall be published.*"

Now what conclusions may be drawn from the foregoing extracts? Bacon attached the greatest importance to the consideration of the internal life of man. He affirms that dramaticall or representative poesy, which brings the world upon the stage, is of excellent use if it be not abused. The discipline of the stage was

neglected in his time, but the care of the ancients was that it should instruct the minds of men unto virtue, and wise men and great philosophers accounted it as the musical bow of the mind. He has devoted the fourth part of his "Instauratio Magna" to setting forth examples of inquiry and invention, choosing such subjects as are at once the most noble in themselves and the most different one from another, that there may be an example in every kind. He is not speaking of precepts and rules by way of interpretation, but actual types and models by which the entire process of the mind, and the whole fabric and order of invention, should be set, as it were, before the eyes.

Not only should the characters of dispositions which are impressed by nature be received into this treatise, but those also which are imposed upon the mind by sex, by age, by region, by health and sickness, by beauty and deformity, and the like; and, again, those that are caused by fortune, as sovereignty, nobility, obscure birth, riches, want, magistracy, privateness, prosperity, adversity, and the like.

The fourth part of Bacon's "Great Instauration" is missing. The above requirements are met in the Shakespeare plays. Could the dramas be more accurately described than in the foregoing extracts?

From a study of the plays let a list be made out of the qualifications which the author must have possessed. It will be found that the only person in whom every qualification will be found who has lived in any age of any country was Francis Bacon. Any investigator who will devote the time and trouble requisite for an exhaustive examination of the subject can come to no other conclusion.

One cannot without feeling deep regret recognise that we have to turn to a foreigner to give "reasons for the faith which we English have in Shakespeare." It was a German, Schlegel, who discovered the great dramatist, and to-day we must turn to his "Lectures on the Drama" for the most penetrating description of his plays. The following is a translation of a passage which in describing the plays almost adopts the words Bacon uses in the foregoing passages as to the scope and object of the fourth part of his "Great Instauration."

“Never, perhaps, was there so comprehensive a talent for the delineation of character as Shakespeare’s. It not only grasps the diversities of rank, sex, and age, down to the dawnings of infancy; not only do the king and the beggar, the hero and the pickpocket, the sage and the idiot speak and act with equal truth; not only does he transport himself to distant ages and foreign nations, and portray in the most accurate manner, with only a few apparent violations of costume, the spirit of the ancient Romans, of the French in their wars with the English, of the English themselves during a great part of their history, of the Southern Europeans (in the serious part of many comedies), the cultivated society of that time, and the former rude and barbarous state of the North; his human characters have not only such depth and precision that they cannot be arranged under classes, and are inexhaustible, even in conception; no, this Prometheus not merely forms men, he opens the gates of the magical world of spirits, calls up the midnight ghost, exhibits before us his witches amidst their unhallowed mysteries, peoples the air with sportive fairies and sylphs; and these beings, existing only in imagination, possess such truth and consistency that even when deformed monsters like Caliban, he extorts the conviction that if there should be such beings they would so conduct themselves. In a word, as he carries with him the most fruitful and daring fancy into the kingdom of nature; on the other hand, he carries nature into the regions of fancy, lying beyond the confines of reality. We are lost in astonishment at seeing the extraordinary, the wonderful, and the unheard of in such intimate nearness.”

“If Shakespeare deserves our admiration for his characters he is equally deserving of it for his exhibition of passion, taking this word in its widest signification, as including every mental condition, every tone from indifference or familiar mirth to the wildest rage and despair. He gives us the history of minds, he lays open to us in a single word a whole series of preceding conditions. His passions do not at first stand displayed to us in all their height, as is the case with so many tragic poets who, in the language of Lessing, are thorough masters of the legal style of love. He paints, in a most inimitable manner, the gradual progress from the first origin. ‘He gives,’ as Lessing says, ‘a

living picture of all the most minute and secret artifices by which a feeling steals into our souls; of all the imperceptible advantages which it there gains, of all the stratagems by which every other passion is made subservient to it, till it becomes the sole tyrant of our desires and our aversions.' Of all poets, perhaps, he alone has portrayed the mental diseases — melancholy, delirium, lunacy — with such inexpressible, and in every respect definite truth, that the physician may enrich his observations from them in the same manner as from real cases."

Chapter XXV. THE PHILOSOPHY OF BACON.

To attempt anything of the nature of a review of Bacon's acknowledged works is a task far too great for the scope of the present volume. To attempt a survey of the whole of his works would require years of diligent study, and would necessitate a perusal of nearly every book published in England between 1576 and 1630. Not that it is suggested that all the literature of this period was the product of his pen or was produced under his supervision, but each book published should be read and considered with attention to arrive at a selection.

There has been no abler judgment of the acknowledged works than that which will be found in William Hazlitt's "Lectures on the Literature of the Age of Elizabeth." Lecture VII. commences with an account of the "Character of Bacon's Works."

It may not, however, be out of place here to try and make plain in what sense Bacon was a philosopher.

In Chapter CXVI. of the "Novum Organum" he makes his position clear in the following words: —

"First then I must request men not to suppose that after the fashion of ancient Greeks, and of certain moderns, as Telesius, Patricius, Severinus, I wish to found a new sect in philosophy. For this is not what I am about; nor do I think that it matters much to the fortunes of men what abstract notions one may entertain concerning nature and the principles of things; and no doubt many old theories of this kind can be revived, and many new ones introduced; just as many theories of the heavens may be supposed which agree well enough with the phenomena and yet differ with each other.

"For my part, I do not trouble myself with any such speculative and withal unprofitable matters. My purpose on the contrary, is to try whether I cannot in very fact lay more firmly the foundations and extend more widely the limits of the power and greatness of man ... I have no entire or universal theory to propound."

So the idea that there was what is termed a system of philosophy constructed by Bacon must be abandoned. What justification is there for calling him the father of the Inductive Philosophy?

It is difficult to answer this question. Spedding admits that Bacon was not the first to break down the dominion of Aristotle. That followed the awakening throughout the intellectual world which was brought about by the Reformation and the revival of learning. Sir John Herschel justifies the application to Bacon of the term "The great Reformer of Philosophy" not on the ground that he introduced inductive reasoning, but because of his "keen perception and his broad and spirit-stirring, almost enthusiastic announcement of its paramount importance, as the Alpha and Omega of science, as the grand and only chain for linking together of physical truths and the eventual key to every discovery and application."

Bacon was 60 years of age when his "Novum Organum" was published. It was founded on a tract he had written in 1607, which he called "Cogitata et Visa," not printed until long after his death. He had previously published a portion of his Essays, the two books on "The Advancement of Learning" and "The Wisdom of the Ancients." Just at the end of his life he gave to the world the "Novum Organum," accompanied by "The Parasceve." Certainly it was not understood in his time. Coke described it as only fit to freight the Ship of Fools, and the King likened it "to the peace of God which passeth all understanding." It is admittedly incomplete, and Bacon made no attempt in subsequent years to complete it. It is a book that if read and re-read becomes fascinating. Taine describes it as "a string of aphorisms, a collection as it were of scientific decrees as of an oracle who foresees the future and reveals the truth." "It is intuition not reasoning," he adds. The wisdom contained in its pages is profound. An understanding of the interpretation of the Idols and the Instances has so far evaded all commentators. Who can explain the "Latent Process"? But the book contains no scheme of arrangement. Therein is found a series of desultory discourses — full of wisdom, rich in analogies, abundant in observation and

profound in comprehension. From here and there in it with the help of the "Parasceve" one can grasp the intention of the great philosopher.

In Chapter LXI. he says:— "But the course I propose for the discovery of sciences is such as leaves but little to the acuteness and strength of wits, but places all wits and understandings on a level." How was this to be accomplished? By the systemization of labour expended on scientific research. A catalogue of the particulars of histories which were to be prepared is appended to the "Parasceve." It embraces every subject conceivable. In Chapter CXI. he says, "I plainly confess that a collection of history, natural and experimental, such as I conceive it, and as it ought to be, is a great, I may say a royal work, and of much labour and expense."

In the "Parasceve" he says:— "If all the wits of all the ages had met or shall hereafter meet together; if the whole human race had applied or shall hereafter apply themselves to philosophy, and the whole earth had been or shall be nothing but academies and colleges and schools of learned men; still without a natural and experimental history such as I am going to prescribe, no progress worthy of the human race could have been made or can be made in philosophy and the sciences. Whereas on the other hand let such a history be once provided and well set forth and let there be added to it such auxiliary and light-giving experiments as in the very course of interpretation will present themselves or will have to be found out; and the investigation of nature and of all sciences will be the work of a few years. This therefore must be done or the business given up."

To carry out this work an army of workers was required. In the preparation of each history some were to make a rough and general collection of facts. Their work was to be handed over to others who would arrange the facts in order for reference. This accomplished, others would examine to get rid of superfluities. Then would be brought in those who would re-arrange that which was left and the history would be completed.

From Chapter CIII. it is clear that Bacon contemplated that eventually all the experiments of all the arts, collected and digested, *should be brought within one*

man's knowledge and judgment. This man, having a supreme view of the whole range of subjects, would transfer experiments of one art to another and so lead "to the discovery of many new things of service to the life and state of man."

Nearly three hundred years have passed since Bacon propounded his scheme. The arts and sciences have been greatly advanced. They might have proceeded more rapidly had the histories been prepared, but since his time there has arisen no man who has taken "all knowledge to be his province" — no man who could occupy the position Bacon contemplated.

The method by which the induction was to be followed is described in Chapter CV. There must be an analysis of nature by proper rejections and exclusions, and then, after a sufficient number of negatives, a conclusion should be arrived at from the affirmative instances. "It is in this induction," Bacon adds, "that our chief hope lies."

Bacon's new organ has never been constructed, and all wits and understandings have not yet been placed on a level.

We come back to the mystery of Francis Bacon, the possessor of the most exquisite intellect that was ever bestowed on any of the children of men. As an historian, he gives us a taste of his quality in "Henry VII." In the Essays and the "Novum Organum," sayings which have the effect of axioms are at once striking and self-evident. But he is always desultory. In perceiving analogies between things which have nothing in common he never had an equal, and this characteristic, to quote Macaulay, "occasionally obtained the mastery over all his other faculties and led him into absurdities into which no dull man could have fallen." His memory was so stored with materials, and these so diverse, that in similitude or with comparison he passed from subject to subject. In the "Advancement of Learning" are enumerated the deficiencies which Bacon observed, *nearly the whole of which were supplied during his lifetime*.

The "Sylva Sylvarum" is the most extraordinary jumble of facts and observations that has ever been brought together. It is a literary curiosity. The "New Atlantis" and other short works in quantity amount to very little. Bacon's life has hitherto remained unaccounted for. In the foregoing pages an attempt has

been made to offer an intelligible explanation of the work to which he devoted his life, namely, to supply the deficiencies which he had himself pointed out and which retarded the advancement of learning.

Hallam has said of Bacon: “If we compare what may be found in the sixth, seventh, and eighth books of the ‘De Augmentis,’ and the various short treatises contained in his works on moral and political wisdom and on human nature, with the rhetoric, ethics, and politics of Aristotle, or with the historians most celebrated for their deep insight into civil society and human character — with Thucydides, Tacitus, Phillipe de Comines, Machiavel, David Hume — we shall, I think, find that one man may almost be compared with all of these together.”

Pope wrote: “Lord Bacon was the greatest genius that England, or perhaps any other country, ever produced.” If an examination, more thorough than has hitherto been made, of the records and literature of his age establishes beyond doubt the truth of the suggestions which have now been put forward, what more can be said? This at any rate, that to him shall be given that title to which he aspired and for which he was willing to renounce his own name. He shall be called “The Benefactor of Mankind.”

APPENDIX.

Sir Thomas Bodley left behind him a short history of his life which is of a fragmentary description. One-fourth of it is devoted to a record of how much he suffered in permitting Essex to urge his advancement in the State. The following is the passage: —

"Now here I can not choose but in making report of the principall accidents that have fallen unto me in the course of my life, but record among the rest, that from the very first day I had no man more to friend among the Lords of the Councell, than was the Lord Treasurer Burleigh: for when occasion had beene offered of declaring his conceit as touching my service, he would alwaies tell the Queen (which I received from her selfe and some other ear-witnesses) that there was not any man in *England* so meet as myselfe to undergoe the office of the Secretary. And sithence his sonne, the present Lord Treasurer, hath signified unto me in private conference, that when his father first intended to advance him to that place, his purpose was withall to make me his Colleague. But the case stood thus in my behalf: before such time as I returned from the Provinces united, which was in the yeare 1597, and likewise after my returne, the then Earle of *Essex* did use me so kindly both by letters and messages, and other great tokens of his inward favours to me, that although I had no meaning, but to settle in my mind my chiefest desire and dependance upon the Lord *Burleigh*, as one that I reputed to be both the best able, and therewithall the most willing to worke my advancement with the Queene, yet I know not how, the Earle, who fought by all devices to divert her love and liking both from the Father and the Son (but from the Sonne in speciall) to withdraw my affection from the one and the other, and to winne mee altogether to depend upon himselfe, did so often take occasion to entertaine the Queene with some prodigall speeches of my sufficiency for a Secretary, which were ever accompanied with words of disgrace against the present Lord Treasurer, as neither she her selfe, of whose favour before I was thoroughly assured, took any great pleasure to preferre me the sooner, (for she

hated his ambition, and would give little countenance to any of his followers) and both the Lord *Burleigh* and his Sonne waxed jealous of my courses, as if under hand I had beene induced by the cunning and kindnesse of the Earle of *Essex*, to oppose my selfe against their dealings. And though in very truth they had no solid ground at all of the least alteration in my disposition towards either of them both, (for I did greatly respect their persons and places, with a settled resolution to doe them any service, as also in my heart I detested to be held of any faction whatsoever) yet the now Lord Treasurer, upon occasion of some talke, that I have since had with him, of the Earle and his actions, hath freely confessed of his owne accord unto me, that his daily provocations were so bitter and sharpe against him, and his comparisons so odious, when he put us in a ballance, as he thought thereupon he had very great reason to use his best meanes, to put any man out of hope of raising his fortune, whom the Earle with such violence, to his extreame prejudice, had endeavoured to dignifie. And this, as he affirmed, was all the motive he had to set himselfe against me, in whatsoever might redound to the bettering of my estate, or increasing of my credit and countenance with the Queene. When I hae thoroughly now bethought me, first in the Earle, of the slender hold-fast that he had in the favour of the Queene, of an endlesse opposition of the cheifest of our Statesmen like still to waite upon him, of his perillous, and feeble, and uncertain advice, as well in his owne, as in all the causes of his friends: and when moreover for my selfe I had fully considered how very untowardly these two Counsellours were affected unto me, (upon whom before in cogitation I had framed all the fabrique of my future prosperity) how ill it did concurre with my naturall disposition, to become, or to be counted either a stickler or partaker in any publique faction, how well I was able, by God's good blessing, to live of my selfe, if I could be content with a competent livelyhood; how short time of further life I was then to expect by the common course of nature: when I had, I say, in this manner represented to my thoughts my particular estate, together with the Earles, I resolved thereupon to possesse my soule in peace all the residue of my daies, to take my full farewell of State imployments, to satisfie my mind with that

mediocrity of worldly living that I had of my owne, and so to retire me from the Court, which was the epilogue and end of all my actions and endeavours of any important note, till I came to the age of fifty-three."

The experience of Bodley and Bacon appears to have been identical. It certainly materially strengthens the case of those who contend that Bacon's conduct to Essex was not deserving of censure on the ground of ingratitude for favours received from him.

The words which Robert Cecil addressed to Bodley, namely, that "he had very great reason to use his best meanes, to put any man out of hope of raising his fortune whom the Earle with such violence, to his extreame prejudice had endeavoured to dignifie," would with equal force have been applied to Bacon's case. The drift of Bodley's account of the matter points to his feeling that Essex's conduct had not been of a disinterested character, and suggests that he felt the Earle had been making a tool of him.

The effect of this was that Bodley adopted the course which Bacon threatened to adopt when refused the office of Attorney-General, solicited for him by Essex — he took a farewell of State employments and retired from the Court to devote himself to the service of his "Reverend Mother, the University of Oxford," and to the advancement of her good. To this end he became a collector of books, whereas Bacon would have become "some sorry book-maker or a true pioner in that mine of truth which Anaxagoras said lay so deep."

ROBERT BANKS AND SON, RACQUET COURT, FLEET STREET.

NOXAM PARIT
Amputat hic putres ramos, non utile lignum
Florum virtus nec integra pars secat.
Rescindenda malis est quævis occasio: ne fors
Invalescant longi, crimina fœda, mali

Figure VI.

DVM
NIL
IOS
Non secus, ac ventis cum annosa feruentibus arbos
Deijcitur, quouis culmina fracta ruspit
Sic regni moles, cum viribus lausta labascit
Iura ejus fœuentes hunc sæculi legunt

Figure VII.

Figure VIII.

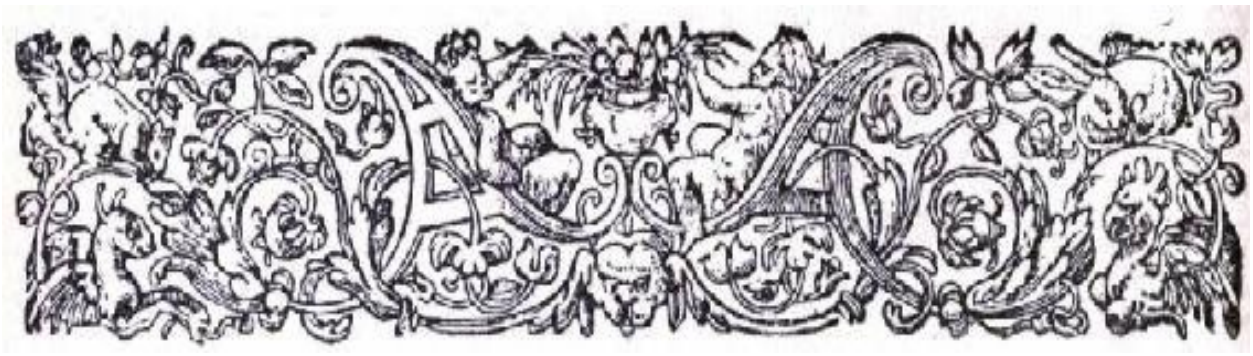

Figure IX.

Figure XX.

THE XXXVIII. BOOKE.

THE ARGVMENT
Marfiſa doth preſent herſelfe before
King Charles, and in his preſence is baptized:
Aſtolfo doth Senapos ſight reſtore,
By whom ſuch hardie feats are enterpriſed,
That Agramant therewith moleſted ſore
Is by Sobrino finally aduiſed,
To make a challenge on Rogeros hed,
To end the troubles that the warre had bred.
Figure XIV.

Figure XIII.

Figure X.

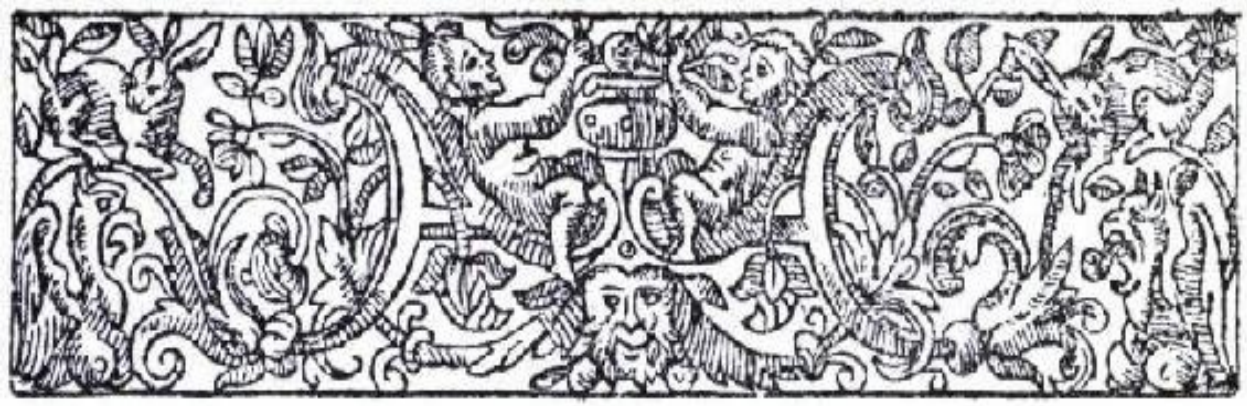

Figure XV.

Figure XI.

Figure XII.

THE
GENEALOGIES
RECORDED IN THE SACRED SCRIPTVRES, According to euery FAMILY and TRIBE.

WITH
The Line of our Sauiour IESVS CHRIST obserued from *Adam* to the blessed VIRGIN MARY.

By

I. S.

CVM PRIVILEGIO.

Figure XXI.

Figure XVI.

Figure XVII.

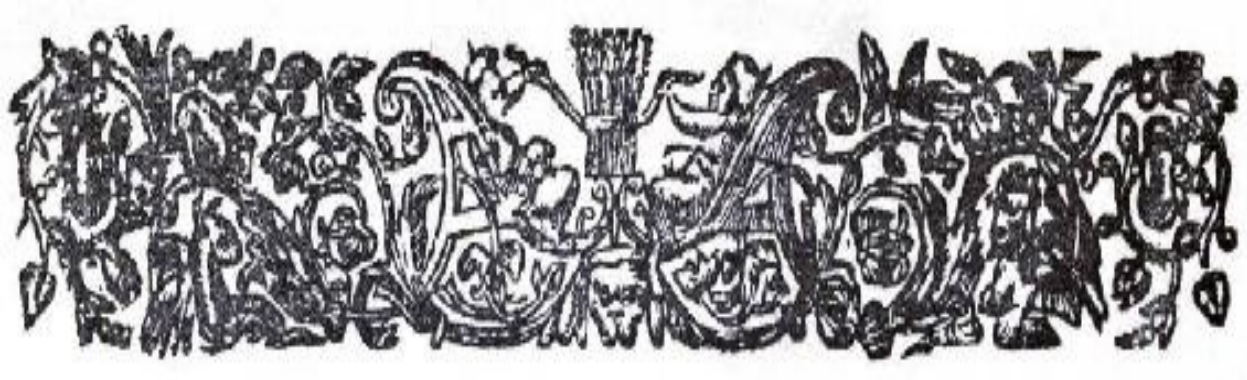

Figure XVIII.

Figure XIX.

ENDNOTES.

[1] Attention is drawn to one of the inaccuracies in "An Introduction to Mathematics," by A. W. Whithead, Sc.D., F.R.S., published in the Home University Library of Modern Knowledge. The author says: "Macaulay in his essay on Bacon contrasts the certainty of mathematics with the uncertainty of philosophy, and by way of a rhetorical example he says, 'There has been no re-action against Taylor's theorem.' He could not have chosen a worse example. For, without having made an examination of English text-books on mathematics contemporary with the publication of this essay, the assumption is a fairly safe one that Taylor's theorem was enunciated and proved wrongly in every one of them."

[2] There are copies of this work bearing date 1626, the year in which Bacon died.

[3] The concluding paragraph of the Epistle to the Reader is as follows: "It's easily imaginable how unconcerned I am as to the fate of this Book either in the History, or the Observations, since I have been so faithful in the first, that it is not my own, but the Historians; and so careful in the second that they are not mine, but the Histories."

[4] "Life and Letters," Vol. VII., page 552.

[5] Lloyd states that this occurred when he was seven years of age.

[6] "The Lives of Statesmen and Favourites of Elizabeth."

[7] Dr. Whitgift was a man of strong moral rectitude, yet in 1593 he became one of its sponsors on the publication of "Venus and Adonis."

[8] It was to Sir Amias that the custody of Mary Queen of Scots was committed.

[9] In the "Gesta Grayorum" one of the articles which the Knights of the Helmet were required to vow to keep, each kissing his helmet as he took his vow, was "Item — every Knight of this Order shall endeavour to add conference and experiment to reading; and therefore shall not only read and peruse 'Guizo,' 'The French Academy,' 'Galiatto the Courtier,' 'Plutarch,' 'The Arcadia,' and the Neoterical writers from time to time," *etc.* The "Gesta Grayorum," which was written in 1594, was not published until 1687. The manuscript was probably incorrectly read as to the titles of the books. "Galiatto," apparently, should be "Galateo," described in a letter of Gabriel Harvey as "The Italian Archbishop brave Galateo." The "Courtier" is the Italian work by Castiglione which was Englished by Sir Thomas Hoby. "Guizo" should be "Guazzo." Stefano Guazzo's "Civil Conversation" — four books — was Englished by G. Pettie and Young.

[10] "Hit" is used by Chaucer as the past participle of "Hide." The name thus yields a suggestive anagram, "Bacohit."

[11] 1618 Edition, page 712.

[12] In addition to this and to the "Gesta Grayorum" (1692) I have only been able to find two references to "The French Academy" in the works of English writers.

J. Payne Collier, in his "Poetical Decameron," Vol. II., page 271, draws attention to the epistle "to the Christian reader" prefixed to the second part, and suggests that the initials T.B. which occur at the end of the dedicatory epistle stand for Thomas Beard, the author of "Theatre of God's Judgments." Collier does not appear to have read "The French Academy." Dibdin, in "Notes on More's Utopia," says, "But I entreat the reader to examine (if he be fortunate enough to possess the book) "The French Academy of Primaudaye," a work written in a style of peculiarly impressive eloquence, and which, not very improbably, was the foundation of Derham's and Paley's "Natural Theology."

[13] "It being now forty years as I remember, since I composed a juvenile work on this subject which with great confidence and a magnificent title I named "The greatest birth of Time."

[14] The block was used on page 626 of the 1594 quarto edition of William Camden's "Britannia," published in London by George Bishop, who was the publisher of the 1586, 1589, and 1594 editions of "The French Academy." There is a marginal note at the foot of the imprint of the block commencing "R. Bacons." Francis Bacon is known to have assisted Camden in the preparation of this work. The manuscript bears evidence of the fact in his handwriting.

[15] One copy of this edition bears the date 1628.

[16] Probably Owen Fellthам, author of "Fellthам's Resolves."

[17] Sir Thomas Smith (1512-1577) was Secretary of State under Edward VI. and Elizabeth — a good scholar and philosopher. He, when Greek lecturer and orator at Cambridge, with John Cheke, introduced, in spite of strong opposition, the correct way of speaking Greek, restoring the pronunciation of the ancients.

[18] State Paper Office; French Correspondence.

[19] Spedding prints this in small type, being doubtful as to the authorship.

[20] That is, never held a brief.

[21] I am indebted to Mr. Harold Hardy for this interesting information. There is an entry in the State Papers, 1608, Jan. 31: Grant at the suit of Sir Francis Bacon to Sir William Cooke, Sir John Constable, and three others, of the King's reversion of the estates in Herts above referred to. Sir Nicholas, to whom it had descended from the Lord Keeper, conveyed the remainder to Queen Elizabeth her heirs and successors "with the condition that if he paid £100 the grant should be void, which was apparently done to prevent the said Sir Francis to dispose of the same land which otherwise by law he might have done." When Lady Anne conveyed the Markes estate to Francis it was subject to a similar condition, namely, that the grant was to be null and void on Lady Ann paying ten shillings to Francis. This condition made it impossible for Francis to dispose of his interest in the estate, hence Anthony's request in the letter above referred to. It is obvious that his relatives considered that Francis was not to be trusted with property which he could turn into money. There was evidently some heavy strain on his resources which caused him to convert everything he could into cash.

[22] "Story of Lord Bacon's Life." Hepworth Dixon, p. 28.

[23] The two letters of 16th September, 1580, and that of 15th October, 1580, are taken from copies in the Lansdowne collection. That of the 6th May, 1586, is in the same collection, and is an original in Bacon's handwriting. The letter of 25th August, 1585, is also in his handwriting, and is in the State Papers, Domestic. The letter without date, written to Burghley presumably in 1591, is from the supplement to the "Resuscitatio," 1657.

[24] "Life and Letters," Vol. I. p. 57.

[25] This was Sir Christopher Hatton.

[26] "Life and Letters," Vol I. p. 59.

[27] Cott. MSS. Tit. CX. 93.

[28] "Life and Letters," Vol. I., p. 110.

[29] "Life and Letters," Vol. I., page 16.

[30] There is a copy bearing date 1626.

[31] "John Dee," by Charlotte Fell Smith, 1909. Constable and Co., Ltd.

[32] See page 31.

[33] "Of the Advancement of Learning," 1640, page 312.

[34] "Of the Advancement of Learning," 1640, pages 115, 116.

[35] 33 is the numerical value of the name "Bacon." The stop preceding it denotes cypher.

[36] Vautrollier was a scholar and printer who came to England from Paris or Roan about the beginning of Elizabeth's reign, and first commenced business in Blackfriars. In 1584 he printed *Jordanus Brunus*, for which he was compelled to fly. In the next year he was in Edinburgh, where, by his help, Scottish printing was greatly improved. Eventually his pardon was procured by powerful friends, amongst whom was Thomas Randolph. In 1588 Richard Field, who was apprenticed to Vautrollier, married Jakin, his daughter, and on his death in 1589 succeeded to the business.

[35] Harl. MSS., 537, pp. 26 and 71; additional MSS., 4,263, p. 144; Harl. MSS., 6,401; Harl. MSS., 6,854, p. 203; Cambridge Univ. Lib., Mm. V. 5; Cotton MSS., Tit., Chap. VII., p. 50 b; Harl. MSS., 859, p. 40; Cotton MSS., Jul., F. VI., p. 158.

[36] See page 72.

[37] See pages 70, 72.

[38] See Appendix.

[39]

If you, O Mildred, will take care to send back to me him whom I desire,
You will be my good, my more than good, my only sister;
But if, unfortunately, by doing nothing you keep him back and send him across the sea,
You will be bad, more than bad, nay no sister at all of mine.
If he comes to Cornwall, peace and all joys be with you,
But if he goes by sea to Sicily I declare war. Farewell.

[40] One note on this book contains an interesting historical fact hitherto unknown. On page 279 the text states: “Among the Conspirators was Nicholo Fedini whom they employed as Chauncellor, he persuaded with a hope more certaine, revealed to Piero, all the practice argreed by his enemies, and delivered him a note of all their names.” Bacon has made the following note in the margin: “Ex (*i.e.*, Essex) did the like in England which he burnt at Shirfr Smiths house in fenchurch Street.”

[41] “A Life of Shakespeare,” 1589, 2nd Edition, p. 308.

[42] Plates Nos. VI. to XXI. will be found after the Appendix.

[43] In the “Advancement of Learning” Bacon says that Demosthenes went so far in regard to the great force that the entrance and access into a cause had to make a good impression that he kept in readiness a stock of prefaces.

[44] Bernard Quaritch, 1905.

[45] See page 105.

[46] Sonnet No. 2.

[47] *’Tis thee myselfe*, Sonnet 62.

[48] See Rawley’s Introduction to “Manes Verulamiana.”

[49] The expression “sugr’d Sonnets” refers to verses which were written with coloured ink to which sugar had been added. When dry the writing shone brightly.

[50] Edwin A. Abbot, in his work, “Francis Bacon,” p. 447, writes, “Bacon’s style (as a writer) varied almost as much as his handwriting.”

[51] “Advancement of Learning,” II. “De Augment. Scient.,” VII. 3.

[52] “Advancement of Learning,” II. For the whole passage compare “De Augment. Scient.,” VII. 3.

[53] A Translation by Spedding, “Works,” Vol. IV., p. 23.

[54] The knowledge touching the affections and perturbations which are the diseases of the mind.

[55] Tabulæ inveniendi.

Brief Biography: Francis Bacon by Robert Adamson

From '1911 Encyclopædia Britannica, Volume 3'

FRANCIS BACON (Baron Verulam, Viscount St Albans) (1561-1626), English philosopher, statesman and essayist, was born at York House in the Strand, London, on the 22nd of January 1560/1. He was the youngest son of Sir Nicholas Bacon (*q.v.*). His mother, the second wife of Sir Nicholas, was a daughter of Sir Anthony Cooke, formerly tutor to Edward VI. She was a woman of considerable culture, well skilled in the classical studies of the period, and a warm adherent of the Reformed or Puritan Church. Very little is known of Bacon's early life and education. His health being then, as always, extremely delicate, he probably received much of his instruction at home. In April 1573 he was entered at Trinity College, Cambridge, where for three years he resided with his brother Anthony. At Cambridge he applied himself diligently to the several sciences as then taught, and came to the conclusion that the methods employed and the results attained were alike erroneous. Although he preserved a reverence for Aristotle (of whom, however, he seems to have known but little), he learned to despise the current Aristotelian philosophy. It yielded no fruit, was serviceable only for disputation, and the end it proposed to itself was a mistaken one. Philosophy must be taught its true purpose, and for this purpose a new method must be devised. With the first germs of this great conception in his mind, Bacon left the university.

On the 27th of June 1576 he and his brother Anthony were entered *de societate magistrorum* at Gray's Inn, and a few months later he was sent abroad with Sir Amyas Paulet, the English ambassador at Paris. The disturbed state of government and society in France at that time afforded him valuable political instruction. It was formerly supposed that certain *Notes on the State of Christendom*, usually printed in his works, contain the results of his

observations, but Spedding has shown that there is no reason for ascribing these *Notes* to him, and that they may be attributed with more probability to one of his brother Anthony's correspondents.

The sudden death of his father in February 1578/9 necessitated Bacon's return to England, and exercised a very serious influence on his fortunes. A considerable sum of money had been laid up by Sir Nicholas for the purchase of an estate for his youngest son, the only one otherwise unprovided for. Owing to his sudden death, this intention was not carried out, and a fifth only of the money descended to Francis. This was one of the gravest misfortunes of his life; he started with insufficient means, acquired a habit of borrowing and was never afterwards out of debt. As it had become necessary that he should adopt some profession, he selected that of law, and took up his residence at Gray's Inn in 1579.

In the fragment *De Interpretatione Naturae Prooemium* (written probably about 1603) Bacon analyses his own mental character and lays before us the objects he had in view when he entered on public life. If his opening sentence, "Ego cum me ad utilitates humanas natum existimarem" ("since I thought myself born to be of advantage to mankind"), seems at first sight a little arrogant, it must be remembered that it is the arrogance of Aristotle's μεγαλόψυχος, who thinks himself worthy of great things, and *is* worthy. The ideal of production of good to the human race through the discovery of truth, was combined in him with the practical desire to be of service to his country. He purposed, therefore, to obtain, if possible, some honourable post in the state which would give him the means of realizing these projects, and would enable him to do somewhat for the church, the third of the objects whose good he had at heart. The constant striving after these three ends is the key to Bacon's life. His qualifications for accomplishing the task were not small. His intellect was far-seeing and acute, quick and yet cautious, meditative, methodical and free from prejudice. If we add to this account that he seems to have been of an unusually amiable disposition we have a fairly complete picture of his mental character at this critical period of his life.

In 1580 he appears to have taken the first step in his career by applying, through his uncle, Burghley, the lord treasurer, for some post at court. His suit, though well received by the queen, was unsuccessful; the particulars are totally unknown. For two years after this disappointment he worked quietly at Gray's Inn, and in 1582 was admitted an outer barrister. In 1584 he took his seat in parliament for Melcombe in Dorsetshire, but the notes for the session do not disclose what reputation he gained. About the same time he made another application to Burghley, apparently with a view to expediting his progress at the bar. His uncle, who appears to have "taken his zeal for ambition," wrote him a severe letter, taking him to task for arrogance and pride, qualities which Bacon vehemently disclaimed. As his advancement at the bar was unusually rapid, his uncle's influence may have been exerted in his behalf. In 1589 he received the first substantial piece of patronage from his powerful kinsman, the reversion of the clerkship of the Star Chamber. The office was worth about £1600 a year; but it did not become vacant for nearly twenty years. A considerable period of his life thus slipped away, and his affairs had not prospered. He had written on the condition of parties in the church; he had set down his thoughts on philosophical reform in the lost tract, *Temporis Partus Maximus*; but he had failed in obtaining the position which he looked upon as an indispensable condition of success. A long and eloquent letter to Burghley throws additional light upon his character, and gives a hint as to the cause of his uncle's slackness in promoting him.

Some time before this, perhaps as early as 1588, Bacon appears to have become acquainted with the earl of Essex, Elizabeth's favourite. At the close of 1591 he was acting as the earl's confidential adviser, and exerted himself, together with his brother Anthony, diligently in the earl's service. In February 1593 parliament was called, and Bacon took his seat for Middlesex. The special occasion for which the House had been summoned was the discovery of one of the numerous popish plots that distracted Elizabeth's reign.

As Bacon's conduct in this emergency seriously affected his fortunes and has been much misunderstood, it is necessary to state, as briefly as possible, the whole facts of the case. The House having been duly informed of the state

necessities, assented to a double subsidy and appointed a committee to draw up the requisite articles. Before this was completed, a message arrived from the House of Lords requesting a conference, which was granted. The committee of the Commons were then informed that the crisis demanded a triple subsidy to be collected in a shorter time than usual, that the Lords could not assent to less than this, and that they desired to confer on the matter. This proposal of the Lords to discuss supply infringed upon the privileges of the Commons; accordingly, when the report of committee was read to the Lower House, Bacon spoke against the proposed conference, pointing out at the same time that a communication from the Lords might be received, but that the actual deliberation on it must be taken by themselves alone. His motion, after some delay, was carried and the conference was rejected. The Lords upon this lowered their demands, and desired merely to make a communication, which, being legitimate, was at once assented to. The House had then before them the proposal for a triple subsidy, to be collected in three, or, as the motion ultimately was shaped, in four years, instead of in six, as the ordinary custom would have been. Bacon, who approved of the increased subsidy, was opposed to the short period in which it was proposed to raise it. He suggested that it would be difficult or impossible for the people to meet such heavy demands, that discontent and trouble would arise, and that the better method of procedure was to raise money by levy or imposition. His motion appears to have received no support, and the four years' subsidy was passed unanimously. Bacon, as it turned out, had been mistaken in thinking that the country would be unable to meet the increased taxation, and his conduct, though prompted by a pure desire to be of service to the queen, gave deep and well-nigh ineradicable offence. He was accused of seeking popularity, and was for a time excluded from the court. His letter to Burghley, who had told him of the queen's displeasure with his speech, offers no apology for what he had said, but expresses regret that his motives should have been misunderstood. He soon felt that the queen's anger was not to be appeased by such a justification. The attorney-generalship had fallen vacant and Bacon became a candidate for the office, his most formidable rival being his life-long antagonist, Edward Coke,

who was then solicitor. Essex warmly espoused Bacon's cause and earnestly pressed his claims upon the queen; but his impetuous, pettish pleading tended to retard the cause. Burghley, on the other hand, in no way promoted his nephew's interest; he would recommend him for the solicitorship, but not for the attorney-generalship; and it is not improbable that Sir Robert Cecil secretly used his influence against his cousin. The queen delayed the appointment, and Bacon's fortunes, as they then stood, could ill brook delay. He was harassed with debt and at times so disheartened that he contemplated retirement from public life. In March 1594 it was at last understood that Coke was to be attorney-general. Essex, though bitterly mortified, at once threw all his energies into the endeavour to procure for Bacon the solicitorship; but in this case also, his method of dealing, which was wholly opposed to Bacon's advice, seemed to irritate the queen. The old offence was not yet forgiven, and after a tedious delay, the office was given, in October 1595, to Serjeant Thomas Fleming. Burghley and Sir John Puckering seem to have assisted Bacon honestly, if not over-warmly, in this second application; but the conduct of Cecil had roused suspicions which were not perhaps without foundation. Essex, to compensate in some degree for Bacon's disappointment, insisted on presenting him with a piece of land, worth about £1800, and situated probably near Twickenham Park. Nor did his kindness cease there; before sailing on the expedition to Cadiz, in the beginning of 1596, he addressed letters to Buckhurst, Fortescue and Egerton, earnestly requesting them to use their influence towards procuring for Bacon the vacant office of master of the rolls. Before anything came of this application, the Cadiz expedition had resulted in a brilliant success, and Essex became the idol of the army and the people. Bacon saw clearly that such a reputation would assuredly alienate the affections of the queen, who loved not to have a subject too powerful or too popular. He therefore addressed an eloquent and imploring letter to the earl, pointing out the dangers of his position and urging upon him what he judged to be the only safe course of action, to seek and secure the favour of the queen alone; above all things dissuading him from the appearance of military popularity. His advice, however, was unpalatable and proved

ineffectual. The earl still continued his usual course of dealing with the queen, depending solely upon her supposed affection for him, and insanely jealous of any other whom she might seem to favour. His unskilful and unlucky management of the sea expedition to Ferrol and the Azores in no way lowered his popularity with the people, but undoubtedly weakened his influence with the queen.

Bacon's affairs in the meantime had not been prospering. He had increased his reputation by the publication in 1597 of his *Essays*, along with which were the *Colours of Good and Evil* and the *Meditationes Sacrae*; but his private fortunes were in a bad condition. No public office apparently could be found for him; a scheme for retrieving his position by a marriage with the wealthy widow, Lady Elizabeth Hatton, failed, and in 1598 he was arrested for debt. He seems, however, to have been growing in favour with the queen. Some years previously (perhaps about 1594), he had begun to be employed by her in crown affairs, and he gradually acquired the standing of one of the learned counsel, though he had no commission or warrant, and received no salary. At the same time he was no longer on the former friendly terms with Essex, a certain estrangement having sprung up between them, caused no doubt by the earl's dislike of his friend's advice. The earl's affairs were then at a somewhat critical stage, and as our judgment upon a most important episode in Bacon's life depends upon our knowledge of the events of the ensuing year, it will be requisite to enter somewhat minutely into proceedings with which Bacon himself had nothing to do.

Ireland was then in a rebellious and discontented condition, and it was difficult for the English government to decide either on a definite course of policy with regard to it, or on a leader by whom that policy might be carried out. A violent quarrel took place between the queen and Essex, who for some months retired from court and refused to be reconciled. At last he came forth from his seclusion, and it was soon understood that he was in person to undertake the subjugation of the rebels in Ireland, with a larger force than had ever before been sent into that country. Into the obscure details of this unhappy campaign it is

unnecessary to enter; one fact stands out clearly, that Essex endeavoured to carry out a treasonable design. His jealousy and ill-temper had been so roused that the only course open to him seemed to be the obtaining a powerful military force, the possession of which would compel the queen to reinstate him in her favour. Whether or not this plan was in contemplation before he undertook the Irish expedition is not evident, though even outsiders at that time entertained some suspicions, but there can be no doubt of the treasonable character of the negotiations carried on in Ireland. His plans, probably not very definite, were disturbed by an imperative message from the queen, ordering him not to return to England without her permission. He at once set off, and, trusting apparently to her affection for him, presented himself suddenly before her. He was, for the moment, received kindly, but was soon afterwards ordered to keep his chamber, and was then given into the custody of the lord keeper at York House, where he remained till March 1600. His great popularity, and the general ignorance of the reasons for his imprisonment, stirred up a strong feeling against the queen, who was reported to be influenced by Bacon, and such indignation was raised against the latter that his friends feared his life would be in danger. It was at last felt necessary that the queen should in some way vindicate her proceedings, and this she at first did, contrary to Bacon's advice, by a declaration from the Star Chamber. This, however, gave little or no satisfaction, and it was found expedient to do what Bacon had always recommended, to have a fair trial, yet not one in which the sentence must needs be damaging to the earl. The trial accordingly took place before a body of her majesty's councillors, and Bacon had a subordinate and unimportant part in the accusation. Essex does not seem to have been at all hurt by his action in this matter, and shortly after his release they were again on friendly terms, Bacon drawing up letters as if to or from the earl with the design of having them brought before the queen. But Bacon did not know the true character of the transactions in which Essex had been engaged. The latter had been released from all custody in August, but in the meantime he had been busily engaged in treasonable correspondence with James of Scotland, and was counting on the Irish army under his ally, Charles Blount, Baron

Mountjoy (afterwards earl of Devonshire), the new deputy. But Mountjoy had apparently come to see how useless the attempt would be to force upon the queen a settlement of the succession and declined to go farther in the matter. Essex was thus thrown upon his own resources, and his anger against the queen being roused afresh by the refusal to renew his monopoly of sweet wines, he formed the desperate project of seizing her person and compelling her to dismiss from her council his enemies Raleigh, Cobham, and Cecil. As some pretext, he intended to affirm that his life was in danger from these men, who were in league with the Spaniards. The plot was forced on prematurely by the suspicions excited at court, and the rash attempt to rouse the city of London (8th of February 1601), proved a complete *fiasco*. The leaders were arrested that night and thrown into prison. Although the actual rising might have appeared a mere outburst of frantic passion, the private examinations of the most prominent conspirators disclosed to the government a plot so widely spread, and involving so many of the highest in the land, that it would have been perilous to have pressed home accusations against all who might be implicated. Essex was tried along with the young earl of Southampton, and Bacon, as one of her majesty's counsel, was present on the occasion. Coke, who was principal spokesman, managed the case with great want of skill, incessantly allowing the thread of the evidence to escape, and giving the prisoners opportunity to indulge in irrelevant justifications and protestations which were not ineffectual in distracting attention from the real question at issue. On the first opportunity Bacon rose and briefly pointed out that the earl's plea of having done nothing save what was absolutely necessary to defend his life from the machinations of his enemies was weak and worthless, inasmuch as these enemies were purely imaginary; and he compared his case to that of Peisistratus, who had made use of a somewhat similar stratagem to cloak his real designs upon the city of Athens. He was thereupon interrupted by the earl, who proceeded to defend himself, by declaring that in one of the letters drawn up by Bacon, and purporting to be from the earl to Anthony Bacon, the existence of these rumours, and the dangers to be apprehended from them, had been admitted; and he continued, "If these reasons

were then just and true, not counterfeit, how can it be that now my pretences are false and injurious?" To this Bacon replied, that "the letters, if they were there, would not blush to be seen for anything contained in them, and that he had spent more time in vain in studying how to make the earl a good servant to the queen than he had done in any thing else." It seems to be forgotten in the general accounts of this matter, not only that Bacon's letters bear out what he said, but that the earl's excuses *were* false. A second time Bacon was compelled to interfere in the course of the trial, and to recall to the minds of those present the real question at issue. He animadverted strongly upon the puerile nature of the defence, and in answer to a remark by Essex, that if he had wished to stir up a rebellion he would have had a larger company with him, pointed out that his dependence was upon the people of London, and compared his attempt to that of the duke of Guise at Paris. To this the earl made little or no reply. Bacon's use of this illustration and of the former one of Peisistratus, has been much commented on, and in general it seems to have been thought that had it not been for his speeches Essex might have escaped, or, at all events, have been afterwards pardoned. But this view of the matter depends on the supposition that Essex was guilty only of a rash outbreak. That this was not the case was well known to the queen and her council. Unfortunately, prudential motives hindered the publication of the whole evidence; the people, consequently, were still ignorant of the magnitude of the crime, and, till recently, biographers of Bacon have been in a like ignorance. The earl himself, before execution, confessed his guilt and the thorough justice of his sentence, while, with singular lack of magnanimity, he incriminated several against whom accusations had not been brought, among others his sister Lady Rich. After his execution it was thought necessary that some account of the facts should be drawn up and circulated, in order to remove the prejudice against the queen's action in the matter. This was entrusted to Bacon, who drew up a *Declaration of the Practices and Treasons attempted and committed by Robert, late Earl of Essex*, his first draft being extensively altered and corrected by the queen and council. Nothing is known with certainty of the reception given to this official explanation, but the ill-feeling against Bacon was

not wholly removed, and some years later, in 1604, he published, in the form of a letter to Mountjoy, an *Apology* for his action in the case. This *Apology* gives a most fair and temperate history of the relations between Bacon and Essex, shows how the prudent counsel of the one had been rejected by the other, and brings out very clearly what we conceive to be the true explanation of the matter. Everything that Bacon could do was done by him, until the real nature of Essex's design was made apparent, and then, as he had repeatedly told the earl, his devotion and respect were for the queen and state, not for any subject; friendship could never take rank above loyalty. Those who blame Bacon must acquit Essex of all wrong-doing.

Bacon's private fortunes, during the period after the death of Essex, were not in a flourishing condition. He had obtained a grant of £1200 from the fines imposed on Catesby, one of the conspirators, but his debts were sufficient to swallow up this and much more. And, though he was trusted by Elizabeth, and on good terms with her, he seems to have seen that he had no chance of advancement. But her death in 1603, followed by the undisputed succession of James, gave him new hopes. He used every means in his power to bring himself under James's notice, writing to all his friends at the Scottish court and to the king himself. He managed to obtain a personal interview with the king, but does not seem to have been much satisfied with it. In fact, while the king confirmed in their situations those who had held crown offices under Elizabeth, Bacon, not holding his post by warrant, was practically omitted. He was, however, continued, by special order of the king, as learned counsel extraordinary, but little or no law business appears to have been entrusted to him. He procured, through his cousin Cecil, the dignity of knighthood, which, contrary to his inclination, he received along with about 300 others, on the 23rd of July 1603. Between this time and the opening of James's first parliament he was engaged in literary work, and sent to the king two pamphlets — one on the Union, the other on measures for the pacification of the church. Shortly after he published his *Apology*. In March 1604 parliament met, and during their short session Bacon's hands seem to have been full of work. It was a busy and stirring time, and events

occurred during it which carried within them the seeds of much future dissension. Prerogative and privilege came more than once into collision, the abuses of purveyance and wardship were made matters of conference, though the thorough discussion of them was deferred to a succeeding session; while James's temper was irritated by the objections brought against his favourite scheme of the Union, and by the attitude taken up by the House with regard to religious affairs. The records are barely full enough to enable us to judge of the share taken by Bacon in these discussions; his name generally appears as the reporter of the committees on special subjects. We can occasionally, however, discern traces of his tact and remarkable prudence; and, on the whole, his attitude, particularly with regard to the Union question, recommended him to James. He was shortly afterwards formally installed as learned counsel, receiving the salary of £40, and at the same time a pension of £60 yearly. He was also appointed one of the commission to treat of the conditions necessary for the Union; and the admirable manner in which the duties of that body were discharged must be attributed mainly to his influence and his complete mastery of the subject. During the recess he published his *Advancement of Learning*, dedicated to the king.

He was now brought into relations with James, and his prospects began to improve. It is important for us to know what were his ideas upon government, upon parliaments, prerogative, and so forth, since a knowledge of this will clear up much that would seem inexplicable in his life. It seems quite evident that Bacon, from position, early training and, one might almost think, natural inclination, held as his ideal of government the Elizabethan system. The king was the supreme power, the centre of law and justice, and his prerogative must not be infringed. Parliament was merely a body called to consult with the king on emergencies (*circa ardua regni*) and to grant supplies. King and parliament together make up the state, but the former is first in nature and importance. The duty of a statesman was, therefore, to carry out the royal will in as prudent a manner as possible; he was the servant of the king, and stood or fell according to his pleasure. He was not singular in his opinions and he was undoubtedly

sincere; and it is only by keeping them constantly in mind that we can understand his after relations with the king.

In the second parliament there was not so much scope for the exercise of his powers. The Gunpowder Plot had aroused in the Commons warmer feelings towards the king; they passed severe laws against recusants, and granted a triple subsidy. At the same time they continued the collection of the grievances concerning which they were to move. In the course of this session Bacon married Alice Barnham "the alderman's daughter, an handsome maiden, to my liking," of whom he had written some years before to his cousin Cecil. Little or nothing is known of their married life.

The third parliament was chiefly occupied with the commercial and legal questions rising out of the proposed Union, in particular, with the dispute as to the naturalization of the *Post Nati*. Bacon argued ably in favour of this measure, but the general feeling was against it. The House would only pass a bill abolishing hostile laws between the kingdoms; but the case of the *Post Nati*, being brought before the law courts, was settled as the king wished. Bacon's services were rewarded in June 1607 by the office of solicitor. Several years passed before he gained another step. Meantime, though circumstances had thrown him too much into active life, he had not forgotten his cherished project of reorganizing natural science. A survey of the ground had been made in the *Advancement*, and some short pieces not published at the time were probably written in the subsequent two or three years. Towards the close of 1607 he sent to his friends a small tract, entitled *Cogitata et Visa*, probably the first draft of what we have under that title. In 1609 he wrote the noble panegyric, *In felicem memoriam Elizabethae*, and the curiously learned and ingenious work, *De Sapientia Veterum*; and completed what seems to have been the *Redargutio Philosophiarum*, or treatise on the "idols of the theatre."

In 1610 the famous fourth parliament of James met. Prerogative, despite Bacon's advice and efforts, clashed more than once with liberty; Salisbury's bold schemes for relieving the embarrassment caused by the reckless extravagance of the king proved abortive, and the House was dissolved in

February 1611. Bacon took a considerable share in the debates, consistently upheld the prerogative, and seemed yet to possess the confidence of the Commons. The death of Salisbury, occurring soon after, opened a position in which Bacon thought his great political skill and sagacity might be made more immediately available for the king's service. How far he directly offered himself for the post of secretary is uncertain, but we know that his hopes were disappointed, the king himself undertaking the duties of the office. About the same time he made two ineffectual applications for the mastership of the wards; the first, on Salisbury's death, when it was given to Sir George Carey; the second, on the death of Carey. It is somewhat hard to understand why so little favour was shown by the king to one who had proved himself able and willing to do good service, and who, in spite of his disappointments, still continued zealously to offer advice and assistance. At last in 1613, a fair opportunity for promotion occurred. The death of Sir Thomas Fleming made a vacancy in the chief justiceship of the king's bench, and Bacon, after some deliberation, proposed to the king that Coke should be removed from his place in the court of common pleas and transferred to the king's bench. He gives several reasons for this in his letter to the king, but in all probability his chief motive was that pointed out by Spedding, that in the court of king's bench there would be less danger of Coke coming into collision with the king on questions of prerogative, in handling which Bacon was always very circumspect and tender. The vacancy caused by Coke's promotion was then filled up by Hobart, and Bacon, finally, stepped into the place of attorney-general. The fact of this advice being offered and followed in all essentials, illustrates very clearly the close relations between the king and Bacon, who had become a confidential adviser on most occasions of difficulty. That his adherence to the royal party was already noticed and commented on appears from the significant remark of Chamberlain, who, after mentioning the recent changes among the law officials, says, "There is a strong apprehension that ... Bacon may prove a dangerous instrument."

Further light is thrown upon Bacon's relations with James, and upon his political sympathies, by the letter to the king advocating the calling of a

parliament, and by the two papers of notes on which his letter was founded. These documents, even after due weight is given to all considerations urged in their favour, seem to confirm the view already taken of Bacon's theory of government, and at the same time show that his sympathies with the royal party tended to blind him to the true character of certain courses of action, which can only be justified by a straining of political ethics. The advice he offered, in all sincerity, was most prudent and sagacious, and *might* have been successfully carried out by a man of Bacon's tact and skill; but it was intensely one-sided, and exhibited a curious want of appreciation of what was even then beginning to be looked on as the true relation of king, parliament and people. Unfortunately for James, he could neither adopt nor carry out Bacon's policy. The parliament which met in April 1614, in which Bacon sat for Cambridge University, and was dissolved in June, after a stormy session, was by no means in a frame of mind suitable for the king's purposes. The House was enraged at the supposed project (then much misunderstood) of the "Undertakers"; objection was taken to Bacon being elected or serving as a member while holding office as attorney-general; and, though an exception was made in his favour, it was resolved that no attorney-general should in future be eligible for a seat in parliament. No supply was granted, and the king's necessities were increased instead of diminished. The emergency suggested to some of the bishops the idea of a voluntary contribution, which was eagerly taken up by the noblemen and crown officials. The scheme was afterwards extended so as to take in the whole kingdom, but lost something of its voluntary character, and the means taken to raise the money, which were not what Bacon would have recommended, were calculated to stir up discontent. The general dissatisfaction received a somewhat unguarded and intemperate expression in a letter sent to the justices of Marlborough by a gentleman of the neighbourhood, named Oliver St John, in which he denounced the attempt to raise funds in this way as contrary to law, reason and religion, as constituting in the king personally an act of perjury, involving in the same crime those who contributed, and thereby subjecting all parties to the curses levelled by the church at such offences. St John was summoned before the Star Chamber

for slander and treasonable language; and Bacon, *ex officio*, acted as public prosecutor. The sentence pronounced (a fine of £5000 and imprisonment for life) was severe, but it was not actually inflicted, and probably was not intended to be carried out, the success of the prosecution being all that was desired. St John remained a short time in prison, and was then released, after making a full apology and submission. The fine was remitted. It seems incredible that Bacon's conduct on this occasion should have been censured by his biographers. The offence was clear; the law was undoubted; no particular sympathy was excited for the culprit; the sentence was not carried out; and Bacon did only what any one in his place would naturally and necessarily have done. The nature of his office involved him in several trials for treason occurring about the same time, and one of these is of interest sufficient to require a somewhat longer examination. Edmund Peacham had been committed to custody for a libel on his superior, James Montagu (1568?-1618), bishop of Bath and Wells. In searching his house for certain papers, the officers came upon some loose sheets stitched together in the form of a sermon, the contents of which were of such a nature that it was judged right to lay them before the council. As it was at first suspected that the writing of this book had been prompted by some disaffected persons, Peacham was interrogated, and after he had declined to give any information, was subjected to torture. Bacon, as one of the learned counsel, was ordered by the council to take part in this examination, which was undoubtedly warranted by precedent, whatever may now be thought of it. Nothing, however, was extracted from Peacham in this way, and it was resolved to proceed against him for treason. Now, in the excited state of popular feeling at that period, the failure of government to substantiate an accusation of treason would have been a serious matter. The king, with whom the council agreed, seems therefore to have thought it desirable to obtain beforehand the opinions of the four chief judges as to whether the alleged offence amounted to treason. In this there was nothing unusual or illegal, and no objection would at that time have been made to it, but James introduced a certain innovation; he proposed that the opinions of the four judges should be given separately and in private. It may be reasonably inferred

that his motive for this was the suspicion, or it may be the knowledge, that Coke did not consider the matter treasonable. At all events when Coke, who as a councillor already knew the facts of the case, was consulted regarding the new proposal of the king, he at once objected to it, saying that "this particular and auricular taking of opinions" was "new and dangerous," and "not according to the custom of the realm." He at last reluctantly assented, and proposed that Bacon should consult with him, while the other law officers addressed themselves to the three puisne judges. By Bacon's directions the proposal to the three judges to give their opinions separately was made suddenly and confidently, and any scruples they might have felt were easily overcome. The first step was thus gained, and it was hoped that if "infusion" could be avoided, if the papers bearing on the case were presented to the judges quickly, and before their minds could be swayed by extraneous influence, their decision on the case would be the same as that of the king. It is clear that the extraneous influence to be feared was Coke, who, on being addressed by Bacon, again objected to giving his opinion separately, and even seemed to hope that his brother judges after they had seen the papers would withdraw their assent to giving their decisions privately. Even after the discussion of the case with Bacon, he would not give his opinion until the others had handed in theirs. What the other judges thought is not definitely known, but Bacon appears to have been unable to put in operation the plan he had devised for swaying Coke's judgment, or if he did attempt it, he was unsuccessful, for Coke finally gave an opinion consistent with what he seems to have held at first, that the book was not treasonable, as it did not disable the king's title. Although the opinions of the judges were not made public, yet as we learn, not only from Bacon, but from a sentence in one of Carleton's letters, a rumour had got about that there was doubt as to the book being treasonable. Under these circumstances, Bacon, who feared that such a report might incite other people to attempt a similar offence, proposed to the king that a second rumour should be circulated in order to destroy the impression caused by the first. "I do think it necessary," he says, "that because we live in an age in which no counsel is kept, and that it is true

there is some bruit abroad that the judges of the king's bench do doubt of the case that it should not be treason, that it be given out constantly, and yet as it were in secret, and so a fame to slide, that the doubt was only upon the publication, in that it was never published. For that (if your majesty marketh it) taketh away or at least qualifieth the danger of the example; for that will be no man's case." Bacon's conduct in this matter has been curiously misrepresented. He has been accused of torturing the prisoner, and of tampering with the judges by consulting them before the trial; nay, he is even represented as selecting this poor clergyman to serve for an example to terrify the disaffected, as breaking into his study and finding there a sermon never intended to be preached, which merely encouraged the people to resist tyranny. All this lavish condemnation rests on a complete misconception of the case. If any blame attaches to him, it must arise either from his endeavour to force Coke to a favourable decision, in which he was in all probability prompted by a feeling, not uncommon with him, that a matter of state policy was in danger of being sacrificed to some senseless legal quibble or precedent, or from his advice to the king that a rumour should be set afloat which was not strictly true.

Bacon's share in another great trial which came on shortly afterwards, the Overbury and Somerset case, is not of such a nature as to render it necessary to enter upon it in detail. It may be noted, however, that his letters about this time show that he had become acquainted with the king's new favourite, the brilliant Sir George Villiers, and that he stood high in the king's good graces. In the early part of 1616, when Thomas Egerton, Baron Ellesmere (*c.* 1540-1617), the lord chancellor, was dangerously ill, Bacon wrote a long and careful letter to the king, proposing himself for the office, should it fall vacant, and stating as frankly as possible of what value he considered his services would be. In answer, he appears to have received a distinct promise of the reversion of the office; but, as Ellesmere recovered, the matter stood over for a time. He proposed, however, that he should be made a privy councillor, in order to give him more weight in his almost recognized position of adviser to the king, and on the 9th of June 1616 he took the oaths and his seat at the council board.

Meanwhile, his great rival Coke, whose constant tendency to limit the prerogative by law and precedent had made him an object of particular dislike to James, had on two points come into open collision with the king's rights. The first case was an action of *praemunire* against the court of chancery, evidently instigated by him, but brought at the instance of certain parties whose adversaries had obtained redress in the chancellor's court after the cause had been tried in the court of king's bench. With all his learning and ingenuity Coke failed in inducing or even forcing the jury to bring in a bill against the court of chancery, and it seems fairly certain that on the technical point of law involved he was wrong. Although his motive was, in great measure, a feeling of personal dislike towards Ellesmere, yet it is not improbable that he was influenced by the desire to restrict in every possible way the jurisdiction of a court which was the direct exponent of the king's wishes. The other case, that of the *commendams*, was more important in itself and in the circumstances connected with it. The general question involved in a special instance was whether or not the king's prerogative included the right of granting at pleasure livings in *commendam*, *i.e.* to be enjoyed by one who was not the incumbent. Bacon, as attorney-general, delivered a speech, which has not been reported; but the king was informed that the arguments on the other side had not been limited to the special case, but had directly impugned the general prerogative right of granting livings. It was necessary for James, as a party interested, at once to take measures to see that the decision of the judges should not be given on the general question without due consultation. He accordingly wrote to Bacon, directing him to intimate to the judges his pleasure that they should delay judgment until after discussion of the matter with himself. Bacon communicated first with Coke, who in reply desired that similar notice should be given to the other judges. This was done by Bacon, though he seems to hint that in so doing he was going a little beyond his instructions. The judges took no notice of the intimation, proceeded at once to give judgment, and sent a letter in their united names to the king announcing what they had done, and declaring that it was contrary to law and to their oath for them to pay any attention to a request that their decision should be delayed.

The king was indignant at this encroachment, and acting partly on the advice of Bacon, held a council on the 6th of June 1616, at which the judges attended. James then entered at great length into the case, censuring the judges for the offensive form of their letter, and for not having delayed judgment upon his demand, which had been made solely because he was himself a party concerned. The judges, at the conclusion of his speech, fell on their knees, and implored pardon for the manner of their letter; but Coke attempted to justify the matter contained in it, saying that the delay required by his majesty was contrary to law. The point of law was argued by Bacon, and decided by the chancellor in favour of the king, who put the question to the judges individually, "Whether, if at any time, in a case depending before the judges, which his majesty conceived to concern him either in power or profit, and thereupon required to consult with them, and that they should stay proceedings in the meantime, they ought not to stay accordingly?" To this all gave assent except Coke, who said that "when the case should be, he would do that should be fit for a judge to do." No notice was taken by the king of this famous, though somewhat evasive, reply, But the judges were again asked what course they would take in the special case now before them. They all declared that they would not decide the matter upon general grounds affecting the prerogative, but upon special circumstances incident to the case; and with this answer they were dismissed. Bacon's conduct throughout the affair has been blamed, but apparently on wrong grounds. As attorney he was merely fulfilling his duty in obeying the command of the king; and in laying down the law on the disputed point, he was, we may be sure, speaking his own convictions. Censure might more reasonably be bestowed on him because he deliberately advised a course of action than which nothing can be conceived better calculated to strengthen the hands of an absolute monarch. This appeared to Bacon justifiable and right, because the prerogative would be defended and preserved intact. Coke certainly stands out in a better light, not so much for his answer, which was rather indefinite, and the force of which is much weakened by his assent to the second question of the king, but for the general spirit of resistance to encroachment exhibited by him. He was undeniably

troublesome to the king, and it is no matter for wonder that James resolved to remove him from a position where he could do so much harm. On the 26th June he was called before the council to answer certain charges, one of which was his conduct in the *praemunire* question. He acknowledged his error on that head, and made little defence. On the 30th he was suspended from council and bench, and ordered to employ his leisure in revising certain obnoxious opinions in his reports. He did not perform the task to the king's satisfaction, and a few months later he was dismissed from office.

Bacon's services to the king's cause had been most important; and as he had, at the same time, acquired great favour with Villiers, his prospects looked brighter than before. According to his custom, he strove earnestly to guide by his advice the conduct of the young favourite. His letters, in which he analyses the various relations in which such a man must stand, and prescribes the course of action suitable for each, are valuable and deserving of attention. Very striking, in view of future events, are the words in which he gives him counsel as to his dealing with judges: "By no means be you persuaded to interpose yourself by word or letter in any cause depending, or like to be depending, in any court of justice, nor suffer any man to do it where you can hinder it; and by all means dissuade the king himself from it, upon the importunity of any, either for their friends or themselves. If it should prevail, it perverts justice; but if the judge be so just, and of so undaunted a courage (as he ought to be) as not to be inclined thereby, yet it always leaves a taint of suspicions and prejudice behind it." It is probable that Villiers at this time had really a sense of the duties attaching to his position and was willing to be guided by a man of approved wisdom. It was not long before an opportunity occurred for showing his gratitude and favour. Ellesmere resigned the chancellorship on the 5th of March 1616/7, and on the 7th the great seal was bestowed upon Bacon, with the title of lord keeper. Two months later he took his seat with great pomp in the chancery court, and delivered a weighty and impressive opening discourse. He entered with great vigour on his new labours, and in less than a month he was able to report to Buckingham that he had cleared off all outstanding chancery cases. He seemed

now to have reached the height of his ambition; he was the first law officer in the kingdom, the accredited minister of his sovereign, and on the best terms with the king and his favourite. His course seemed perfectly prosperous and secure, when a slight storm arising opened his eyes to the frailty of the tenure by which he held his position.

Coke was in disgrace but not in despair; there seemed to be a way whereby he could reconcile himself to Buckingham, through the marriage of his daughter, who had an ample fortune, to Sir John Villiers, brother of the marquess, who was penniless or nearly so. The match was distasteful to Lady Hatton and to her daughter; a violent quarrel was the consequence, and Bacon, who thought the proposed marriage most unsuitable, took Lady Hatton's part. His reasons for disapproval he explained to the king and Buckingham, but found to his surprise that their indignation was strongly roused against him. He received from both bitter letters of reproof; it was rumoured that he would be disgraced, and Buckingham was said to have compared his present conduct to his previous unfaithfulness to Essex. Bacon, who seems to have acted from a simple desire to do the best for Buckingham's own interests, at once changed his course, advanced the match by every means in his power, and by a humble apology appeased the indignation that had been excited against him. It had been a sharp lesson, but things seemed to go on smoothly after it, and Bacon's affairs prospered.

On the 4th of January 1617/8 he received the higher title of lord chancellor; in July of the same year he was made Baron Verulam and in January 1620/1 he was created Viscount St Albans. His fame, too, had been increased by the publication in 1620 of his most celebrated work, the *Novum Organum*. He seemed at length to have made satisfactory progress towards the realization of his cherished aims; the method essential for his Instauration was partially completed; and he had attained as high a rank in the state as he had ever contemplated. But his actions in that position were not calculated to promote the good of his country.

Connected with the years during which he held office is one of the weightiest charges against his character. Buckingham, notwithstanding the advice he had

received from Bacon himself, was in the habit of addressing letters to him recommending the causes of suitors. In many cases these seem nothing more than letters of courtesy, and, from the general tone, it might fairly be concluded that there was no intention to sway the opinion of the judge illegally, and that Bacon did not understand the letters in that sense. This view is supported by consideration of the few answers to them which are extant. One outstanding case, however, that of Dr Steward, casts some suspicion on all the others. The terms of Buckingham's note concerning it might easily have aroused doubts; and we find that the further course of the action was to all appearances exactly accommodated to Dr Steward, who had been so strongly recommended. It is, of course, dangerous to form an extreme judgment on an isolated and partially understood case, of which also we have no explanation from Bacon himself, but if the interpretation advanced by Heath be the true one, Bacon certainly suffered his first, and, so far as we can see, just judgment on the case to be set aside, and the whole matter to be reopened in obedience to a request from Buckingham.

It is somewhat hard to understand Bacon's position with regard to the king during these years. He was the first officer of the crown, the most able man in the kingdom, prudent, sagacious and devoted to the royal party. Yet his advice was followed only when it chimed in with James's own will; his influence was of a merely secondary kind; and his great practical skill was employed simply in carrying out the measures of the king in the best mode possible. We know indeed that he sympathized cordially with the home policy of the government; he had no objection to such monopolies or patents as seemed advantageous to the country, and for this he is certainly not to be blamed. The opinion was common at the time, and the error was merely ignorance of the true principles of political economy. But we know also that the patents were so numerous as to be oppressive, and we can scarcely avoid inferring that Bacon more readily saw the advantages to the government than the disadvantages to the people. In November 1620, when a new parliament was summoned to meet on January following, he earnestly pressed that the most obnoxious patents, those of alehouses and inns, and the monopoly of gold and silver thread, should be given up, and wrote to

Buckingham, whose brothers were interested, advising him to withdraw them from the impending storm. This prudent advice was unfortunately rejected. But while he went cordially with the king in domestic affairs, he was not quite in harmony with him on questions of foreign policy. Not only was he personally in favour of a war with Spain for the recovery of the Palatinate, but he foresaw in such a course of action the means of drawing together more closely the king and his parliament. He believed that the royal difficulties would be removed if a policy were adopted with which the people could heartily sympathize, and if the king placed himself at the head of his parliament and led them on. But his advice was neglected by the vacillating and peace-loving monarch, his proffered proclamation was put aside, and a weak, featureless production substituted in its place. Nevertheless the new parliament seemed at first more responsive than might have been looked for. A double subsidy was granted, which was expressly stated to be "not on any consideration or condition for or concerning the Palatinate." The session, however, was not far advanced when the question of patents was brought up; a determined attack was made upon the very ones of which Bacon had been in dread, and it was even proposed to proceed against the referees (Bacon and Montagu) who had certified that there was no objection to them in point of law. This proposal, though pressed by Coke, was allowed to drop; while the king and Buckingham, acting under the advice of Williams, afterwards lord keeper, agreed to give up the monopolies. It was evident, however, that a determined attack was about to be made upon Bacon, and that the proceeding against the referees was really directed against him. It is probable that this charge was dropped because a more powerful weapon had in the meantime been placed in his enemies' hands. This was the accusation of bribery and corrupt dealings in chancery suits, an accusation apparently wholly unexpected by Bacon, and the possibility of which he seems never to have contemplated until it was actually brought against him. At the beginning of the session a committee had been appointed for inquiring into abuses in the courts of justice. Some illegal practices of certain chancery officials had been detected and punished by the court itself, and generally there was a disposition to overhaul its

affairs, while Coke and Lionel Cranfield, earl of Middlesex (1575-1645) directly attacked some parts of the chancellor's administration. But on the 14th of March one Christopher Aubrey appeared at the bar of the House, and charged Bacon with having received from him a sum of money while his suit was going on, and with having afterwards decided against him. Bacon's letter on this occasion is worthy of serious attention; he evidently thought the charge was but part of the deliberate scheme to ruin him which had already been in progress. A second accusation (Edward Egerton's case) followed immediately after, and was investigated by the House, who, satisfied that they had just matter for reprehension, appointed the 19th for a conference with the Lords. On that day Bacon, as he had feared, was too ill to attend. He wrote to the Lords excusing his absence, requesting them to appoint a convenient time for his defence and cross-examination of witnesses, and imploring them not to allow their minds to be prejudiced against him, at the same time declaring that he would not "trick up an innocency with cavillations, but plainly and ingenuously declare what he knew or remembered." The charges rapidly accumulated, but Bacon still looked upon them as party moves, and was in hopes of defending himself. Nor did he seem to have lost his courage, if we are to believe the common reports of the day, though certainly they do not appear worthy of very much credit.

The notes bearing upon the interview which he obtained with the king show that he had begun to see more clearly the nature and extent of the offences with which he was charged, that he now felt it impossible altogether to exculpate himself, and that his hopes were directed towards obtaining some mitigation of his sentence. The long roll of charges made upon the 19th of April finally decided him; he gave up all idea of defence, and wrote to the king begging him to show him favour in this emergency. The next day he sent in a general confession to the Lords, trusting that this would be considered satisfactory. The Lords, however, decided that it was not sufficient as a ground for their censure, and demanded a detailed and particular confession. A list of twenty-eight charges was then sent him, to which an answer by letter was required. On the 30th of April his "confession and humble submission" was handed in. In it, after

going over the several instances, he says, “I do again confess, that on the points charged upon me, although they should be taken as myself have declared them, there is a great deal of corruption and neglect; for which I am heartily and penitently sorry, and submit myself to the judgment, grace, and mercy of the court.” On the 3rd of May, after considerable discussion, the Lords decided upon the sentence, which was, That he should undergo fine and ransom of £40,000; that he should be imprisoned in the Tower during the king’s pleasure; that he should be for ever incapable of any office, place or employment in the state or commonwealth; that he should never sit in parliament, or come within the verge of the court. This heavy sentence was only partially executed. The fine was in effect remitted by the king; imprisonment in the Tower lasted for about four days; a general pardon (not of course covering the parliamentary censure) was made out, and though delayed at the seal for a time by Lord Keeper Williams, was passed probably in November 1621. The cause of the delay seems to have lain with Buckingham, whose friendship had cooled, and who had taken offence at the fallen chancellor’s unwillingness to part with York House. This difference was finally smoothed over, and it was probably through his influence that Bacon received the much-desired permission to come within the verge of the court. He never again sat in parliament.

So ends this painful episode, which has given rise to the most severe condemnation of Bacon, and which still presents great and perhaps insuperable difficulties. On the whole, the tendency of the most recent and thorough researches has been towards the opinion that Bacon’s own account of the matter (from which, indeed, our knowledge of it is chiefly drawn) is substantially correct. He distinguishes three ways in which bribes may be given, and ingenuously confesses that his own acts amounted to corruption and were worthy of condemnation. Now, corruption strictly interpreted would imply the deliberate sale of justice, and this Bacon explicitly denies, affirming that he never “had bribe or reward in his eye or thought when he pronounced any sentence or order.” When we analyse the specific charges against him, with his answers to them, we find many that are really of little weight. The twenty-eighth

and last, that of negligence in looking after his servants, though it did him much harm, may fairly be said to imply no moral blame. The majority of the others are instances of gratuities given after the decision, and it is to be regretted that the judgment of the peers gives us no means of determining how such gifts were looked upon, whether or not the acceptance of them was regarded as a "corrupt" practice. In four cases specifically, and in some others by implication, Bacon confesses that he had received bribes from suitors *pendente lite*. Yet he affirms, as we said before, that his intention was never swayed by a bribe; and so far as any of these cases can be traced, his decisions, often given in conjunction with some other official, are to all appearance thoroughly just. In several cases his judgment appears to have been given against the party bestowing the bribe, and in at least one instance, that of Lady Wharton, it seems impossible to doubt that he must have known when accepting the present that his opinion would be adverse to her cause. Although, then, he felt that these practices were really corrupt, and even rejoiced that his own fall would tend to purify the courts from them, he did not feel that he was guilty of perverting justice for the sake of reward. How far, then, is such defence or explanation admissible and satisfactory? It is clear that two things are to be considered: the one the guilt of taking bribes or presents on any consideration, the other the moral guilt depending upon the wilful perversion of justice. The attempt has sometimes been made to defend the whole of Bacon's conduct on the ground that he did nothing that was not done by many of his contemporaries. Bacon himself disclaims a defence of this nature, and we really have no direct evidence which shows to what extent the offering and receiving of such bribes then prevailed. That the practice was common is indeed implied by the terms in which Bacon speaks of it, and it is not improbable that the fact of these gifts being taken by officials was a thing fairly well known, although all were aware of their illegal character, and it was plain that any public exposure of such dealings would be fatal to the individual against whom the charge was made out. Bacon knew all this; he was well aware that the practice was in itself indefensible, and that his conduct was therefore corrupt and deserving of censure. So far, then, as the mere taking of

bribes is concerned, he would permit no defence, and his own confession and judgment on his action contain as severe a condemnation as has ever been passed upon him. Yet in the face of this he does not hesitate to call himself "the justest chancellor that hath been in the five changes since Sir Nicholas Bacon's time"; and this on the plea that his intentions had always been pure, and had never been affected by the presents he received. His justification has been set aside by modern critics, not on the ground that the evidence demonstrates its falsity, but because it is inconceivable or unnatural that any man should receive a present from another, and not suffer his judgment to be swayed thereby. It need hardly be said that such an *a priori* conviction is not a sufficient basis on which to found a sweeping condemnation of Bacon's integrity as an administrator of justice. On the other hand, even if it be admitted to be possible and conceivable that a present should be given by a suitor simply as seeking favourable consideration of his cause, and not as desirous of obtaining an unjust decree, and should be accepted by the judge on the same understanding, this would not entitle one absolutely to accept Bacon's statement. Further evidence is necessary in order to give foundation to a definite judgment either way; and it is extremely improbable, nay, almost impossible, that such can ever be produced. In these circumstances, due weight should be given to Bacon's own assertions of his perfect innocence and purity of intention; they ought not to be put out of court unless found in actual contradiction to the facts, and the reverse of this is the case, so far as has yet appeared.

The remaining five years of his life, though he was still harassed by want of means, for James was not liberal, were spent in work far more valuable to the world than anything he had accomplished in his high office. In March 1622 he presented to Prince Charles his *History of Henry VII.*; and immediately, with unwearied industry, set to work to complete some portions of his great work. In November 1622 appeared the *Historia Ventorum*; in January 1622/3, the *Historia Vitae et Mortis*; and in October of the same year, the *De Augmentis Scientiarum*, a Latin translation, with many additions, of the *Advancement*. Finally, in December 1624, he published his *Apophthegms*, and *Translations of*

some of the Psalms, dedicated to George Herbert; and, in 1625, a third and enlarged edition of the *Essays*.

Busily occupied with these labours, his life now drew rapidly to a close. In March 1626 he came to London, and when driving one day near Highgate, was taken with a desire to discover whether snow would act as an antiseptic. He stopped his carriage, got out at a cottage, purchased a fowl, and with his own hands assisted to stuff it with snow. He was seized with a sudden chill, and became so seriously unwell that he had to be conveyed to Lord Arundel's house, which was near at hand. Here his illness increased, the cold and chill brought on bronchitis and he died, after a few days' suffering, on the 9th of April 1626.

Bacon's Works and Philosophy.

A complete survey of Bacon's works and an estimate of his place in literature and philosophy are matters for a volume. It is here proposed merely to classify the works, to indicate their general character and to enter somewhat more in detail upon what he himself regarded as his great achievement, — the reorganization of the sciences and the exposition of a new method by which the human mind might proceed with security and certainty towards the true end of all human thought and action.

Putting aside the letters and occasional writings, we may conveniently distribute the other works into three classes, *Professional, Literary, Philosophical*. The Professional works include the *Reading on the Statute of Uses*, the *Maxims of Law* and the treatise (possibly spurious) on the *Use of the Law*. "I am in good hope," said Bacon himself, "that when Sir Edward Coke's reports and my rules and decisions shall come to posterity, there will be (whatsoever is now thought) question who was the greater lawyer." If Coke's reports show completer mastery of technical details, greater knowledge of precedent, and more of the dogged grasp of the letter than do Bacon's legal writings, there can be no dispute that the latter exhibit an infinitely more comprehensive intelligence of the abstract principles of jurisprudence, with a richness and ethical fulness that more than compensate for their lack of dry legal detail. Bacon seems indeed to have been a lawyer of the first order, with a keen

scientific insight into the bearings of isolated facts and a power of generalization which admirably fitted him for the self-imposed task, unfortunately never completed, of digesting or codifying the chaotic mass of the English law.

Among the literary works are included all that he himself designated moral and historical pieces, and to these may be added some theological and minor writings, such as the *Apophthegms*. Of the moral works the most valuable are the *Essays*, which have been so widely read and universally admired. The matter is of the familiar, practical kind, that "comes home to men's bosoms." The thoughts are weighty, and even when not original have acquired a peculiar and unique tone or cast by passing through the crucible of Bacon's mind. A sentence from the *Essays* can rarely be mistaken for the production of any other writer. The short, pithy sayings have become popular mottoes and household words. The style is quaint, original, abounding in allusions and witticisms, and rich, even to gorgeousness, with piled-up analogies and metaphors. The first edition contained only ten essays, but the number was increased in 1612 to thirty-eight, and in 1625 to fifty-eight. The short tract, *Colours of Good and Evil*, which with the *Meditationes Sacrae* originally accompanied the Essays, was afterwards incorporated with the *De Augmentis*. Along with these works may be classed the curiously learned piece, *De Sapientia Veterum*, in which he works out a favourite idea, that the mythological fables of the Greeks were allegorical and concealed the deepest truths of their philosophy. As a scientific explanation of the myths the theory is of no value, but it affords fine scope for the exercise of Bacon's unrivalled power of detecting analogies in things apparently most dissimilar. The *Apophthegms*, though hardly deserving Macaulay's praise of being the best collection of jests in the world, contain a number of those significant anecdotes which Bacon used with such effect in his other writings. Of the historical works, besides a few fragments of the projected history of Britain there remains the *History of Henry VII.*, a valuable work, giving a clear and animated narrative of the reign, and characterizing Henry with great skill. The style is in harmony with the matter, vigorous and flowing, but naturally with less of the quaintness and richness suitable to more thoughtful and original writings.

The series of the literary works is completed by the minor treatises on theological or ecclesiastical questions. Some of the latter, included among the occasional works, are sagacious and prudent and deserve careful study. Of the former, the principal specimens are the *Meditationes Sacrae* and the *Confession of Faith*. The *Paradoxes* (Characters of a believing Christian in paradoxes, and seeming contradictions), which was often and justly suspected, has been conclusively proved by Grosart to be the work of another author.

Philosophical Works. — The great mass of Bacon's writings consists of treatises or fragments, which either formed integral parts of his grand comprehensive scheme, or were closely connected with it. More exactly they may be classified under three heads: (A) Writings originally intended to form parts of the *Instauratio*, but which were afterwards superseded or thrown aside; (B) Works connected with the *Instauratio*, but not directly included in its plan; (C) Writings which actually formed part of the *Instauratio Magna*.

(A) This class contains some important tracts, which certainly contain little, if anything, that is not afterwards taken up and expanded in the more elaborate works, but are not undeserving of attention, from the difference in the point of view and method of treatment. The most valuable of them are: (1) The *Advancement of Learning*, of which no detailed account need be given, as it is completely worked up into the *De Augmentis*, and takes its place as the first part of the *Instauratio*. (2) *Valerius Terminus*, a very remarkable piece, composed probably about 1603, though perhaps retouched at a later period. It contains a brief and somewhat obscure outline of the first two parts in the *Instauratio*, and is of importance as affording us some insight into the gradual development of the system in Bacon's own mind. (3) *Temporis Partus Masculus*, another curious fragment, remarkable not only from its contents, but from its style, which is arrogant and offensive, in this respect unlike any other writing of Bacon's. The adjective *masculus* points to the power of bringing forth fruit possessed by the new philosophy, and perhaps indicates that all previous births of time were to be looked upon as feminine or imperfect; it is used in a somewhat similar sense in *Letters and Life*, vi. 183, "*In verbis masculis*, no flourishing or painted words,

but such words as are fit to go before deeds." (4) *Redargutio Philosophiarum*, a highly finished piece in the form of an oration, composed probably about 1608 or 1609, and containing in pretty full detail much of what afterwards appears in connexion with the *Idola Theatri* in book i. of the *Novum Organum*. (5) *Cogitata et Visa*, perhaps the most important of the minor philosophical writings, dating from 1607 (though possibly the tract in its present form may have been to some extent altered), and containing in weighty and sonorous Latin the substance of the first book of the *Organum*. (6) The *Descriptio Globi Intellectualis*, which is to some extent intermediate between the *Advancement* and the *De Augmentis*, goes over in detail the general classification of the sciences, and enters particularly on some points of minor interest. (7) The brief tract *De Interpretatione Naturae Sententiae Duodecim* is evidently a first sketch of part of the *Novum Organum*, and in phraseology is almost identical with it. (8) A few smaller pieces, such as the *Inquisitio de Motu*, the *Calor et Frigus*, the *Historia Soni et Auditus* and the *Phaenomena Universi*, are early specimens of his *Natural History*, and exhibit the first tentative applications of the new method.

(B) The second group consists of treatises on subjects connected with the *Instauratio*, but not forming part of it. The most interesting, and in many respects the most remarkable, is the philosophic romance, the *New Atlantis*, a description of an ideal state in which the principles of the new philosophy are carried out by political machinery and under state guidance, and where many of the results contemplated by Bacon are in imagination attained. The work was to have been completed by the addition of a second part, treating of the laws of a model commonwealth, which was never written. Another important tract is the *De Principiis atque Originibus secundum Fabulas Cupidinis et Caeli*, where, under the disguise of two old mythological stories, he (in the manner of the *Sapientia Veterum*) finds the deepest truths concealed. The tract is unusually interesting, for in it he discusses at some length the limits of science, the origin of things and the nature of primitive matter, giving at the same time full notices of Democritus among the ancient philosophers and of Telesio among the modern. Deserving of attention are also the *Cogitationes de Natura Rerum*,

probably written early, perhaps in 1605, and the treatise on the theory of the tides, *De Fluxu et Refluxu Maris*, written probably about 1616.

(C) The philosophical works which form part of the *Instauratio* must of course be classed according to the positions which they respectively hold in that scheme of the sciences.

The great work, the reorganization of the sciences, and the restoration of man to that command over nature which he had lost by the fall, consisted in its final form of six divisions.

I. *Partitiones Scientiarum*, a survey of the sciences, either such as then existed or such as required to be constructed afresh — in fact, an inventory of all the possessions of the human mind. The famous classification on which this survey proceeds is based upon an analysis of the faculties and objects of human knowledge. This division is represented by the *De Augmentis Scientiarum*.

II. *Interpretatio Naturae*. — After the survey of all that has yet been done in the way of discovery or invention, comes the new method, by which the mind of man is to be trained and directed in its progress towards the renovation of science. This division is represented, though only imperfectly, by the *Novum Organum*, particularly book ii.

III. *Historia Naturalis et Experimentalis*. — The new method is valueless, because inapplicable, unless it be supplied with materials duly collected and presented — in fact, unless there be formed a competent natural history of the *Phaenomena Universi*. A short introductory sketch of the requisites of such a natural history, which, according to Bacon, is essential, necessary, the *basis totius negotii*, is given in the tract *Parasceve*, appended to the *Novum Organum*. The principal works intended to form portions of the history, and either published by himself or left in manuscript, are *Historia Ventorum, Historia Vitae et Mortis, Historia Densi et Rari*, and the extensive collection of facts and observations entitled *Sylva Sylvarum*.

IV. *Scala Intellectus*. — It might have been supposed that the new philosophy could now be inaugurated. Materials had been supplied, along with a new method by which they were to be treated, and naturally the next step would be

the finished result. But for practical purposes Bacon interposed two divisions between the preliminaries and the philosophy itself. The first was intended to consist of types or examples of investigations conducted by the new method, serviceable for keeping the whole process vividly before the mind, or, as the title indicates, such that the mind could run rapidly up and down the several steps or grades in the process. Of this division there seems to be only one small fragment, the *Filum Labyrinthi*, consisting of but two or three pages.

V. *Prodromi*, forerunners of the new philosophy. This part, strictly speaking, is quite extraneous to the general design. According to the *Distributio Operis*, it was to contain certain speculations of Bacon's own, not formed by the new method, but by the unassisted use of his understanding. These, therefore, form temporary or uncertain anticipations of the new philosophy. There is extant a short preface to this division of the work, and according to Spedding some of the miscellaneous treatises, such as *De Principiis, De Fluxu et Refluxu, Cogitationes de Natura Rerum*, may probably have been intended to be included under this head. This supposition receives some support from the manner in which the fifth part is spoken of in the *Novum Organum*, i. 116.

VI. The new philosophy, which is the work of future ages, and the result of the new method.

Bacon's grand motive in his attempt to found the sciences anew was the intense conviction that the knowledge man possessed was of little service to him. "The knowledge whereof the world is now possessed, especially that of nature, extendeth not to magnitude and certainty of works." Man's sovereignty over nature, which is founded on knowledge alone, had been lost, and instead of the free relation between things and the human mind, there was nothing but vain notions and blind experiments. To restore the original commerce between man and nature, and to recover the *imperium hominis*, is the grand object of all science. The want of success which had hitherto attended efforts in the same direction had been due to many causes, but chiefly to the want of appreciation of the nature of philosophy and its real aim. Philosophy is not the science of things divine and human; it is not the search after truth. "I find that even those that have

sought knowledge for itself, and not for benefit or ostentation, or any practical enablement in the course of their life, have nevertheless propounded to themselves a wrong mark, namely, satisfaction (which men call Truth) and not operation." "Is there any such happiness as for a man's mind to be raised above the confusion of things, where he may have the prospect of the order of nature and error of man? But is this a view of delight only and not of discovery? of contentment and not of benefit? Shall he not as well discern the riches of nature's warehouse as the beauty of her shop? Is truth ever barren? Shall he not be able thereby to produce worthy effects, and to endow the life of man with infinite commodities?" Philosophy is altogether practical; it is of little matter to the fortunes of humanity what abstract notions one may entertain concerning the nature and the principles of things. This truth, however, has never yet been recognized; it has not yet been seen that the true aim of all science is "to endow the condition and life of man with new powers or works," or "to extend more widely the limits of the power and greatness of man." Nevertheless, it is not to be imagined that by this being proposed as the great object of search there is thereby excluded all that has hitherto been looked upon as the higher aims of human life, such as the contemplation of truth. Not so, but by following the new aim we shall also arrive at a *true* knowledge of the universe in which we are, for without knowledge there is no power; truth and utility are in ultimate aspect the same; "works themselves are of greater value as pledges of truth than as contributing to the comforts of life." Such was the conception of philosophy with which Bacon started, and in which he felt himself to be thoroughly original. As his object was new and hitherto unproposed, so the method he intended to employ was different from all modes of investigation hitherto attempted. "It would be," as he says, "an unsound fancy and self-contradictory, to expect that things which have never yet been done can be done except by means which have never yet been tried." There were many obstacles in his way, and he seems always to have felt that the first part of the new scheme must be a *pars destruens*, a destructive criticism of all other methods. Opposition was to be expected, not only from previous philosophies, but especially from the human

mind itself. In the first place, natural antagonism might be looked for from the two opposed sects, the one of whom, in despair of knowledge, maintained that all science was impossible; while the other, resting on authority and on the learning that had been handed down from the Greeks, declared that science was already completely known, and consequently devoted their energies to methodizing and elaborating it. Secondly, within the domain of science itself, properly so called, there were two "kind of rovers" who must be dismissed. The first were the speculative or logical philosophers, who construe the universe *ex analogia hominis*, and not *ex analogia mundi*, who fashion nature according to preconceived ideas, and who employ in their investigations syllogism and abstract reasoning. The second class, who were equally offensive, consisted of those who practised blind experience, which is mere groping in the dark (*vaga experientia mera palpatio est*), who occasionally hit upon good works or inventions, which, like Atalanta's apples, distracted them from further steady and gradual progress towards universal truth. In place of these straggling efforts of the unassisted human mind, a graduated system of helps was to be supplied, by the use of which the mind, when placed on the right road, would proceed with unerring and mechanical certainty to the invention of new arts and sciences.

Such were to be the peculiar functions of the new method, though it has not definitely appeared what that method was, or to what objects it could be applied. But, before proceeding to unfold his method, Bacon found it necessary to enter in considerable detail upon the general subject of the obstacles to progress, and devoted nearly the whole of the first book of the *Organum* to the examination of them. This discussion, though strictly speaking extraneous to the scheme, has always been looked upon as a most important part of his philosophy, and his name is perhaps as much associated with the doctrine of Idols (*Idola*) as with the theory of induction or the classification of the sciences.

The doctrine of the kinds of fallacies or general classes of errors into which the human mind is prone to fall, appears in many of the works written before the *Novum Organum*, and the treatment of them varies in some respects. The classification in the *Organum*, however, not only has the author's sanction, but

has received the stamp of historical acceptation; and comparison of the earlier notices, though a point of literary interest, has no important philosophic bearing. The *Idola* (*Nov. Org.* i. 39) false notions of things, or erroneous ways of looking at nature, are of four kinds: the first two innate, pertaining to the very nature of the mind and not to be eradicated; the third creeping insensibly into men's minds, and hence in a sense innate and inseparable; the fourth imposed from without. The first kind are the *Idola Tribus*, idols of the tribe, fallacies incident to humanity or the race in general. Of these, the most prominent are — the proneness to suppose in nature greater order and regularity than there actually is; the tendency to support a preconceived opinion by affirmative instances, neglecting all negative or opposed cases; and the tendency to generalize from few observations, or to give reality to mere abstractions, figments of the mind. Manifold errors also result from the weakness of the senses, which affords scope for mere conjecture; from the influence exercised over the understanding by the will and passions; from the restless desire of the mind to penetrate to the ultimate principles of things; and from the belief that "man is the measure of the universe," whereas, in truth, the world is received by us in a distorted and erroneous manner. The second kind are the *Idola Specus*, idols of the cave, or errors incident to the peculiar mental or bodily constitution of each individual, for according to the state of the individual's mind is his view of things. Errors of this class are innumerable, because there are numberless varieties of disposition; but some very prominent specimens can be indicated. Such are the tendency to make all things subservient to, or take the colour of some favourite subject, the extreme fondness and reverence either for what is ancient or for what is modern, and excess in noting either differences or resemblances amongst things. A practical rule for avoiding these is also given: "In general let every student of nature take this as a rule, that whatever his mind seizes and dwells upon with particular satisfaction is to be held in suspicion". The third class are the *Idola Fori*, idols of the market-place, errors arising from the influence exercised over the mind by mere words. This, according to Bacon, is the most troublesome kind of error, and has been especially fatal in philosophy. For words introduce a

fallacious mode of looking at things in two ways: first, there are some words that are really merely names for non-existent things, which are yet supposed to exist simply because they have received a name; secondly, there are names hastily and unskilfully abstracted from a few objects and applied recklessly to all that has the faintest analogy with these objects, thus causing the grossest confusion. The fourth and last class are the *Idola Theatri*, idols of the theatre, *i.e.* fallacious modes of thinking resulting from received systems of philosophy and from erroneous methods of demonstration. The criticism of the demonstrations is introduced later in close connexion with Bacon's new method; they are the rival modes of procedure, to which his own is definitely opposed. The philosophies which are "redargued" are divided into three classes, the sophistical, of which the best example is Aristotle, who, according to Bacon, forces nature into his abstract schemata and thinks to explain by definitions; the empirical, which from few and limited experiments leaps at once to general conclusions; and the superstitious, which corrupts philosophy by the introduction of poetical and theological notions.

Such are the general causes of the errors that infest the human mind; by their exposure the way is cleared for the introduction of the new method. The nature of this method cannot be understood until it is exactly seen to what it is to be applied. What idea had Bacon of science, and how is his method connected with it? Now, the science which was specially and invariably contemplated by him was natural philosophy, the great mother of all the sciences; it was to him the type of scientific knowledge, and its method was the method of all true science. To discover exactly the characteristics and the object of natural philosophy it is necessary to examine the place it holds in the general scheme furnished in the *Advancement* or *De Augmentis*. All human knowledge, it is there laid down, may be referred to man's memory or imagination or reason. In the first, the bare facts presented to sense are collected and stored up; the exposition of them is *history*, which is either natural or civil. In the second, the materials of sense are separated or divided in ways not corresponding to nature but after the mind's own pleasure, and the result is *poesy* or feigned history. In the third, the materials are

worked up after the model or pattern of nature, though we are prone to err in the progress from sense to reason; the result is *philosophy*, which is concerned either with God, with nature or with man, the second being the most important. Natural philosophy is again divided into speculative or theoretical and operative or practical, according as the end is contemplation or works. Speculative or theoretical natural philosophy has to deal with natural substances and qualities and is subdivided into physics and metaphysics. Physics inquires into the efficient and material causes of things; metaphysics, into the formal and final causes. The principal objects of physics are concrete substances, or abstract though physical qualities. The research into abstract qualities, the fundamental problem of physics, comes near to the metaphysical study of *forms*, which indeed differs from the first only in being more general, and in having as its results a *form* strictly so called, *i.e.* a nature or quality which is a limitation or specific manifestation of some higher and better-known genus. Natural philosophy is, therefore, in ultimate resort the study of *forms*, and, consequently, the fundamental problem of philosophy in general is the discovery of these *forms*.

"On a given body to generate or superinduce a new nature or natures, is the work and aim of human power.... Of a given nature to discover the form or true specific difference, or nature-engendering nature (*natura naturans*) or source of emanation (for these are the terms which are nearest to a description of the thing), is the work and aim of human knowledge."

The questions, then, whose answers give the key to the whole Baconian philosophy, may be put briefly thus — What are forms? and how is it that knowledge of them solves both the theoretical and the practical problem of science? Bacon himself, as may be seen from the passage quoted above, finds great difficulty in giving an adequate and exact definition of what he means by a form. As a general description, the following passage from the *Novum Organum*, ii. 4, may be cited: — "The form of a nature is such that given the form the nature infallibly follows.... Again, the form is such that if it be taken away the nature infallibly vanishes.... Lastly, the true form is such that it deduces the

given nature from some source of being which is inherent in more natures, and which is better known in the natural order of things than the form itself."

From this it would appear that, since by a *nature* is meant some sensible quality, superinduced upon, or possessed by, a body, so by a form we are to understand the cause of that nature, which cause is itself a determinate case or manifestation of some general or abstract quality inherent in a greater number of objects. But all these are mostly marks by which a form may be recognized, and do not explain what the form really is. A further definition is accordingly attempted in Aph. 13: — "The form of a thing is the very thing itself, and the thing differs from the form no otherwise than as the apparent differs from the real, or the external from the internal, or the thing in reference to the man from the thing in reference to the universe."

This throws a new light on the question, and from it the inference at once follows, that the forms are the permanent causes or substances underlying all visible phenomena, which are merely manifestations of their activity. Are the forms, then, forces? At times it seems as if Bacon had approximated to this view of the nature of things, for in several passages he identifies forms with laws of activity. Thus, he says — "When I speak of forms I mean nothing more than those laws and determinations of absolute actuality which govern and constitute any simple nature, as heat, light, weight, in every kind of matter and subject that is susceptible of them. Thus the form of heat or the form of light is the same thing as the law of heat or the law of light." "Matter rather than forms should be the object of our attention, its configurations and changes of configuration, and simple action, and law of action or motion; for forms are figments of the human mind, unless you will call those laws of action forms." "Forms or true differences of things, which are in fact laws of pure act." "For though in nature nothing really exists besides individual bodies, performing pure individual acts according to a fixed law, yet in philosophy this very law, and the investigation, discovery and explanation of it, is the foundation as well of knowledge as of operation. And it is this law, with its clauses, that I mean when I speak of forms."

Several important conclusions may be drawn from these passages. In the first place, it is evident that Bacon, like the Atomical school, of whom he highly approved, had a clear perception and a firm grasp of the *physical* character of natural principles; his *forms* are no ideas or abstractions, but highly general physical properties. Further, it is hinted that these general qualities may be looked upon as the modes of action of simple bodies. This fruitful conception, however, Bacon does not work out; and though he uses the word *cause*, and identifies *form* with *formal cause*, yet it is perfectly apparent that the modern notions of cause as dynamical, and of nature as in a process of flow or development, are foreign to him, and that in his view of the ultimate problem of science, cause meant *causa immanens*, or underlying substance, effects were not consequents but manifestations, and nature was regarded in a purely statical aspect. That this is so appears even more clearly when we examine his general conception of the unity, gradation and function of the sciences. That the sciences are organically connected is a thought common to him and to his distinguished predecessor Roger Bacon. "I that hold it for a great impediment towards the advancement and further invention of knowledge, that particular arts and sciences have been disincorporated from general knowledge, do not understand one and the same thing which Cicero's discourse and the note and conceit of the Grecians in their word *circle learning* do intend. For I mean not that use which one science hath of another for ornament or help in practice; but I mean it directly of that use by way of supply of light and information, which the particulars and instances of one science do yield and present for the framing or correcting of the axioms of another science in their very truth and notion." In accordance with this, Bacon placed at the basis of the particular sciences which treat of God, nature and man, one fundamental doctrine, the *Prima Philosophia*, or first philosophy, the function of which was to display the unity of nature by connecting into one body of truth such of the highest axioms of the subordinate sciences as were not special to one science, but common to several. This first philosophy had also to investigate what are called the adventitious or transcendental conditions of essences, such as Much, Little, Like, Unlike,

Possible, Impossible, Being, Nothing, the logical discussion of which certainly belonged rather to the laws of reasoning than to the existence of things, but the physical or real treatment of which might be expected to yield answers to such questions as, why certain substances are numerous, others scarce; or why, if like attracts like, iron does not attract iron. Following this summary philosophy come the sciences proper, rising like a pyramid in successive stages, the lowest floor being occupied by natural history or experience, the second by physics, the third, which is next the peak of unity, by metaphysics. The knowledge of the peak, or of the one law which binds nature together, is perhaps denied to man. Of the sciences, physics, as has been already seen, deals with the efficient and material, *i.e.* with the variable and transient, causes of things. But its inquiries may be directed either towards concrete bodies or towards abstract qualities. The first kind of investigation rises little above mere natural history; but the other is more important and paves the way for metaphysics. It handles the configurations and the appetites or motions of matter. The configurations, or inner structure of bodies, include dense, rare, heavy, light, hot, cold, &c., — in fact, what are elsewhere called simple natures. Motions are either simple or compound, the latter being the sum of a number of the former. In physics, however, these matters are treated only as regards their material or efficient causes, and the result of inquiry into any one case gives no general rule, but only facilitates invention in some similar instance. Metaphysics, on the other hand, treats of the formal or final cause of these same substances and qualities, and results in a general rule. With regard to forms, the investigation may be directed either towards concrete bodies or towards qualities. But the forms of substances "are so perplexed and complicated, that it is either vain to inquire into them at all, or such inquiry as is possible should be put off for a time, and not entered upon till forms of a more simple nature have been rightly investigated and discussed." "To inquire into the form of a lion, of an oak, or gold, nay, even of water or air, is a vain pursuit; but to inquire the *form* of dense, rare, hot, cold, &c., as well configurations as motions, which in treating of physic I have in great part enumerated (I call them forms of the first class), and which (like the letters of the

alphabet) are not many, and yet make up and sustain the essences and forms of all substances — this, I say, it is which I am attempting, and which constitutes and defines that part of metaphysic of which we are now inquiring." Physics inquires into the same qualities, but does not push its investigations into ultimate reality or reach the more general causes. We thus at last attain a definite conclusion with regard to forms, and it appears clear that in Bacon's belief the true function of science was the search for a few fundamental physical qualities, highly abstract and general, the combinations of which give rise to the simple natures and complex phenomena around us. His general conception of the universe may therefore be called mechanical or statical; the cause of each phenomenon is supposed to be actually contained in the phenomenon itself, and by a sufficiently accurate process could be sifted out and brought to light. As soon as the causes are known man regains his power over nature, for "whosoever knows any form, knows also the utmost possibility of superinducing that nature upon every variety of matter, and so is less restrained and tied in operation either to the basis of the matter or to the condition of the efficients."

Nature thus presented itself to Bacon's mind as a huge congeries of phenomena, the manifestations of some simple and primitive qualities, which were hid from us by the complexity of the things themselves. The world was a vast labyrinth, amid the windings of which we require some clue or thread whereby we may track our way to knowledge and thence to power. This thread, the *filum labyrinthi*, is the new method of *induction*. But, as has been frequently pointed out, the new method could not be applied until facts had been observed and collected. This is an indispensable preliminary. "Man, the servant and interpreter of nature, can do and understand so much, and so much only, as he has observed in fact or in thought of the course of nature; beyond this he neither knows anything nor can do anything." The proposition that our knowledge of nature necessarily begins with observation and experience, is common to Bacon and many contemporary reformers of science, but he laid peculiar stress upon it, and gave it a new meaning. What he really meant by observation was a competent natural history or collection of facts. "The firm foundations of a purer

natural philosophy are laid in natural history." "First of all we must prepare a *natural and experimental history*, sufficient and good; and this is the foundation of all." The senses and the memory, which collect and store up facts, must be assisted; there must be a *ministration* of the senses and another of the memory. For not only are instances required, but these must be arranged in such a manner as not to distract or confuse the mind, *i.e.* tables and arrangements of instances must be constructed. In the preliminary collection the greatest care must be taken that the mind be absolutely free from preconceived ideas; nature is only to be conquered by obedience; man must be merely receptive. "All depends on keeping the eye steadily fixed upon the facts of nature, and so receiving their images simply as they are; for God forbid that we should give out a dream of our own imagination for a pattern of the world; rather may He graciously grant to us to write an apocalypse or true vision of the footsteps of the Creator imprinted on his creatures." Concealed among the facts presented to sense are the causes or forms, and the problem therefore is so to analyse experience, so to break it up into pieces, that we shall with certainty and mechanical ease arrive at a true conclusion. This process, which forms the essence of the new method, may in its entirety, as a ministration to the reason, be called a logic; but it differs widely from the ordinary or school logic in end, method and form. Its aim is to acquire command over nature by knowledge, and to invent new arts, whereas the old logic strove only after dialectic victories and the discovery of new arguments. In method the difference is even more fundamental. Hitherto the mode of demonstration had been by the syllogism; but the syllogism is, in many respects, an incompetent weapon. It is compelled to accept its first principles on trust from the science in which it is employed; it cannot cope with the subtlety of nature; and it is radically vitiated by being founded on hastily and inaccurately abstracted notions of things. For a syllogism consists of propositions, propositions of words, and words are the symbols of notions. Now the first step in accurate progress from sense to reason, or true philosophy, is to frame a *bona notio* or accurate conception of the thing; but the received logic never does this. It flies off at once from experience and particulars to the highest and most

general propositions, and from these descends, by the use of middle terms, to axioms of lower generality. Such a mode of procedure may be called *anticipatio naturae* (for in it reason is allowed to prescribe to things), and is opposed to the true method, the *interpretatio naturae*, in which reason follows and obeys nature, discovering her secrets by obedience and submission to rule. Lastly, the very form of induction that has been used by logicians in the collection of their instances is a weak and useless thing. It is a mere enumeration of a few known facts, makes no use of exclusions or rejections, concludes precariously, and is always liable to be overthrown by a negative instance. In radical opposition to this method the Baconian induction begins by supplying helps and guides to the senses, whose unassisted information could not be relied on. Notions were formed carefully, and not till after a certain process of induction was completed. The formation of axioms was to be carried on by a gradually ascending scale. "Then and only then may we hope well of the sciences, when in a just scale of ascent and by successive steps, not interrupted or broken, we rise from particulars to lesser axioms; and then to middle axioms, one above the other; and last of all to the most general." Finally the very form of induction itself must be new. "The induction which is to be available for the discovery and demonstration of sciences and arts must analyse nature by proper rejections and exclusions; and then, after a sufficient number of negatives, come to a conclusion on the affirmative instances, which has not yet been done, or even attempted, save only by Plato. ... And this induction must be used not only to discover axioms, but also in the formation of notions." This view of the function of exclusion is closely connected with Bacon's doctrine of forms, and is in fact dependent upon that theory. But induction is neither the whole of the new method, nor is it applicable to forms only. There are two other grand objects of inquiry: the one, the transformation of concrete bodies; the other, the investigation of the latent powers and the latent schematism or configuration. With regard to the first, in ultimate result it depends upon the theory of forms; for whenever the compound body can be regarded as the sum of certain simple natures, then our knowledge of the forms of these natures gives us the power of

superinducing a new nature on the concrete body. As regards the latent process (*latens processus*) which goes on in all cases of generation and continuous development or motion, we examine carefully, and by quantitative measurements, the gradual growth and change from the first elements to the completed thing. The same kind of investigation may be extended to many cases of natural motion, such as voluntary action or nutrition; and though inquiry is here directed towards concrete bodies, and does not therefore penetrate so deeply into reality as in research for forms, yet great results may be looked for with more confidence. It is to be regretted that Bacon did not complete this portion of his work, in which for the first time he approaches modern conceptions of change. The latent configuration (*latens schematismus*) or inward structure of the parts of a body must be known before we can hope to superinduce a new nature upon it. This can only be discovered by analysis, which will disclose the ultimate constituents (natural particles, not atoms) of bodies, and lead back the discussion to forms or simple natures, whereby alone can true light be thrown on these obscure questions. Thus, in all cases, scientific explanation depends upon knowledge of forms; all phenomena or secondary qualities are accounted for by being referred to the primary qualities of matter.

The several steps in the inductive investigation of the form of any nature flow readily from the definition of the form itself. For that is always and necessarily present when the nature is present, absent when it is absent, decreases and increases according as the nature decreases and increases. It is therefore requisite for the inquiry to have before us instances in which the nature is present. The list of these is called the table of *Essence and Presence*. Secondly, we must have instances in which the nature is absent; only as such cases might be infinite, attention should be limited to such of them as are most akin to the instances of presence. The list in this case is called table of *Absence in Proximity*. Thirdly, we must have a number of instances in which the nature is present in different degrees, either increasing or decreasing in the same subject, or variously present in different subjects. This is the table of *Degrees*, or *Comparison*. After the formation of these tables, we proceed to apply what is perhaps the most valuable

part of the Baconian method, and that in which the author took most pride, the process of exclusion or rejection. This elimination of the non-essential, grounded on the fundamental propositions with regard to forms, is the most important of Bacon's contributions to the logic of induction, and that in which, as he repeatedly says, his method differs from all previous philosophies. It is evident that if the tables were complete, and our notions of the respective phenomena clear, the process of exclusion would be a merely mechanical *counting out*, and would *infallibly* lead to the detection of the cause or form. But it is just as evident that these conditions can never be adequately fulfilled. Bacon saw that his method was impracticable (though he seems to have thought the difficulties not insuperable), and therefore set to work to devise new helps, *adminicula*. These he enumerates in ii., *Aph.* 21: — *Prerogative Instances, Supports of Induction, Rectification of Induction, Varying the Investigation according to the Nature of the Subject, Prerogative Natures, Limits of Investigation, Application to Practice, Preparations for Investigation, the Ascending and Descending Scale of Axioms*. The remainder of the *Organum* is devoted to a consideration of the twenty-seven classes of Prerogative Instances, and though it contains much that is both luminous and helpful, it adds little to our knowledge of what constitutes the Baconian method. On the other heads we have but a few scattered hints. But although the rigorous requirements of science could only be fulfilled by the employment of all these means, yet in their absence it was permissible to draw from the tables and the exclusion a hypothetical conclusion, the truth of which might be verified by the use of the other processes; such an hypothesis is called fantastically the First Vintage (*Vindemiatio*). The inductive method, so far as exhibited in the *Organum*, is exemplified by an investigation into the nature of heat.

Such was the method devised by Bacon, and to which he ascribed the qualities of absolute certainty and mechanical simplicity. But even supposing that this method were accurate and completely unfolded, it is evident that it could only be made applicable and produce fruit when the phenomena of the universe have been very completely tabulated and arranged. In this demand for a

complete natural history, Bacon also felt that he was original, and he was deeply impressed with the necessity for it; in fact, he seems occasionally to place an even higher value upon it than upon his *Organum*. Thus, in the preface to his series of works forming the third part of the *Instauratio*, he says: "It comes, therefore, to this, that my *Organum*, even if it were completed, would not without the *Natural History* much advance the *Instauration of the Sciences*, whereas the *Natural History* without the *Organum* would advance it not a little." But a complete natural history is evidently a thing impossible, and in fact a history can only be collected by attending to the requirements of the *Organum*. This was seen by Bacon, and what may be regarded as his final opinion on the question is given in the important letter to Jean Antoine Baranzano ("Redemptus": 1590-1622):— "With regard to the multitude of instances by which men may be deterred from the attempt, here is my answer. First, what need to dissemble? Either store of instances must be procured, or the business must be given up. All other ways, however enticing, are impassable. Secondly, the prerogatives of instances, and the mode of experimenting upon experiments of light (which I shall hereafter explain), will diminish the multitude of them very much. Thirdly, what matter, I ask, if the description of the instances should fill six times as many volumes as Pliny's *History*? ... For the true natural history is to take nothing except instances, connections, observations and canons". The *Organum* and the *History* are thus correlative, and form the two equally necessary sides of a true philosophy; by their union the new philosophy is produced.

Summary. — Two questions may be put to any doctrine which professes to effect a radical change in philosophy or science. Is it original? Is it valuable? With regard to the first, it has been already pointed out that Bacon's induction or inductive method is distinctly his own, though it cannot and need not be maintained that the general spirit of his philosophy was entirely new.

The value of the method is the separate and more difficult question. It has been assailed on the most opposite grounds. Macaulay, while admitting the *accuracy* of the process, denied its efficiency, on the ground that an operation

performed naturally was not rendered more easy or efficacious by being subjected to analysis. This objection is curious when confronted with Bacon's reiterated assertion that the *natural* method pursued by the unassisted human reason is distinctly opposed to his; and it is besides an argument that tells so strongly against many sciences, as to be comparatively worthless when applied to any one. There are, however, more formidable objections against the method. It has been pointed out, and with perfect justice, that science in its progress has not followed the Baconian method, that no one discovery can be pointed to which can be definitely ascribed to the use of his rules, and that men the most celebrated for their scientific acquirements, while paying homage to the name of Bacon, practically set at naught his most cherished precepts. The reason of this is not far to seek, and has been pointed out by logicians of the most diametrically opposed schools. The mechanical character both of the natural history and of the logical method applied to it resulted necessarily from Bacon's radically false conception of the nature of cause and of the causal relation. The whole logical or scientific problem is treated as if it were one of co-existence, to which in truth the method of exclusion is scarcely applicable, and the assumption is constantly made that each phenomenon has one and only one cause. The inductive formation of axioms by a gradually ascending scale is a route which no science has ever followed, and by which no science could ever make progress. The true scientific procedure is by hypothesis followed up and tested by verification; the most powerful instrument is the deductive method, which Bacon can hardly be said to have recognized. The power of framing hypothesis points to another want in the Baconian doctrine. If that power form part of the true method, then the mind is not wholly passive or recipient; it anticipates nature, and moulds the experience received by it in accordance with its own constructive ideas or conceptions; and yet further, the minds of various investigators can never be reduced to the same dead mechanical level. There will still be room for the scientific use of the imagination and for the creative flashes of genius.

If, then, Bacon himself made no contributions to science, if no discovery can be shown to be due to the use of his rules, if his method be logically defective,

and the problem to which it was applied one from its nature incapable of adequate solution, it may not unreasonably be asked, How has he come to be looked upon as the great leader in the reformation of modern science? How is it that he shares with Descartes the honour of inaugurating modern philosophy? To this the true answer seems to be that Bacon owes his position not only to the general spirit of his philosophy, but to the manner in which he worked into a connected system the new mode of thinking, and to the incomparable power and eloquence with which he expounded and enforced it. Like all epoch-making works, the *Novum Organum* gave expression to ideas which were already beginning to be in the air. The time was ripe for a great change; scholasticism, long decaying, had begun to fall; the authority not only of school doctrines but of the church had been discarded; while here and there a few devoted experimenters were turning with fresh zeal to the unwithered face of nature. The fruitful thoughts which lay under and gave rise to these scattered efforts of the human mind, were gathered up into unity, and reduced to system in the new philosophy of Bacon. It is assuredly little matter for wonder that this philosophy should contain much that is now inapplicable, and that in many respects it should be vitiated by radical errors. The details of the logical method on which its author laid the greatest stress have not been found of practical service; yet the fundamental ideas on which the theory rested, the need for rejecting rash generalization, and the necessity for a critical analysis of experience, are as true and valuable now as they were then. Progress in scientific discovery is made mainly, if not solely, by the employment of hypothesis, and for that no code of rules can be laid down such as Bacon had devised. Yet the framing of hypothesis is no mere random guesswork; it is left not to the imagination alone, but to the *scientific imagination*. There is required in the process not merely a preliminary critical induction, but a subsequent experimental comparison, verification or proof, the canons of which can be laid down with precision. To formulate and show grounds for these laws is to construct a philosophy of induction, and it must not be forgotten that the first step towards the accomplishment of the task

was made by Bacon when he introduced and gave prominence to the powerful logical instrument of exclusion or elimination.

It is curious and significant that in the domain of the moral and metaphysical sciences his influence has been perhaps more powerful, and his authority has been more frequently appealed to, than in that of the physical. This is due, not so much to his expressed opinion that the inductive method was applicable to all the sciences, as to the generally practical, or, one may say, *positive* spirit of his system. Theological questions, which had tortured the minds of generations, are by him relegated from the province of reason to that of faith. Even reason must be restrained from striving after ultimate truth; it is one of the errors of the human intellect that it will not rest in general principles, but must push its investigations deeper. Experience and observation are the only remedies against prejudice and error. Into questions of metaphysics, as commonly understood, Bacon can hardly be said to have entered, but a long line of thinkers have drawn inspiration from him, and it is not without justice that he has been looked upon as the originator and guiding spirit of what is known as the empirical school.

Bacon's Influence. — It is impossible within our limits to do more than indicate the influence which Bacon's views have had on subsequent thinkers. The most valuable and complete discussion of the subject is contained in T. Fowler's edition of the *Novum Organum* (introd. § 14). It is there argued that, both in philosophy and in natural science, Bacon's influence was immediate and lasting. Under the former head it is pointed out (i.) that the fundamental principle of Locke's *Essay*, that all our ideas are product of sensation and reflection, is briefly stated in the first aphorism of the *Novum Organum*, and (ii.) that the whole atmosphere of that treatise is characteristic of the *Essay*. Bacon is, therefore, regarded by many as the father of what is most characteristic in English psychological speculation. As he himself said, he "rang the bell which called the wits together." In the sphere of ethics he is similarly regarded as a forerunner of the empirical method. The spirit of the *De Augmentis* (bk. vii.) and the inductive method which is discussed in the *Novum Organum* are at the root of all theories which have constructed a moral code by an inductive examination

of human consciousness and the results of actions. Among such theories utilitarianism especially is the natural result of the application to the phenomenon of conduct of the Baconian experimental method. In this connexion, however, it is important to notice that Hobbes, who had been Bacon's secretary, makes no mention of Baconian induction, nor does he in any of his works make any critical reference to Bacon himself. It would, therefore, appear that Bacon's influence was not immediate.

In the sphere of natural science, Bacon's importance is attested by references to his work in the writings of the principal scientists, not only English, but French, German and Italian. Fowler (*op. cit.*) has collected from Descartes, Gassendi, S. Sorbière, Jean Baptiste du Hamel, quotations which show how highly Bacon was regarded by the leaders of the new scientific movement. Sorbière, who was by no means partial to things English, definitely speaks of him as "celuy qui a le plus puissamment solicité les interests de la physique, et excité le monde à faire des expériences" (*Relation d'un voyage en Angleterre*, Cologne, 1666, p-64). It was, however, Voltaire and the encyclopaedists who raised Bacon to the pinnacle of his fame in France, and hailed him as "le père de la philosophie expérimentale" (*Lettres sur les Anglois*). Condillac, in the same spirit, says of him, "personne n'a mieux connu que lui la cause de nos erreurs." So the *Encyclopédie*, besides giving a eulogistic article "Baconisme," speaks of him (in d'Alembert's preliminary discourse) as "le plus grand, le plus universel, et le plus éloquent des philosophes." Among other writers, Leibnitz and Huygens give testimony which is the more valuable as being critical. Leibnitz speaks of Bacon as "divini ingenii vir," and, like several other German authors, classes him with Campanella; Huygens refers to his "bonnes méthodes." If, however, we are to attach weight to English writers of the latter half of the 17th century, we shall find that one of Bacon's greatest achievements was the impetus given by his *New Atlantis* to the foundation of the Royal Society (*q.v.*). Dr Thomas Sprat (1635-1713), bishop of Rochester and first historian of the society, says that Bacon of all others "had the true imagination of the whole extent" of the enterprise, and that in his works are to be found the best arguments

for the experimental method of natural philosophy (*Hist. of the Royal Society*, p-36, and Thomas Tenison's *Baconiana*, p-266). In this connexion reference should be made also to Cowley's *Ode to the Royal Society*, and to Dr John Wallis's remarks in Hearne's *Preface to P. Langtoft's Chronicle* (appendix, num. xi.). Joseph Glanvill, in his *Scepsis Scientifica* (dedication) says, "Solomon's house in the *New Atlantis* was a prophetic scheme of the Royal Society"; and Henry Oldenburg (*c.* 1615-1677), one of the first secretaries of the society, speaks of the new eagerness to obtain scientific data as "a work begun by the single care and conduct of the excellent Lord Verulam." Boyle, in whose works there are frequent eulogistic references to Bacon, regarded himself as a disciple and was indeed known as a second Bacon. The predominating influence of Bacon's philosophy is thus clearly established in the generation which succeeded his own. There is abundant evidence to show that in the universities of Oxford and Cambridge (especially the latter) the new spirit had already modified the old curricula. Bacon has frequently been disparaged on the ground that his name is not mentioned by Sir Isaac Newton. It can be shown, however, that Newton was not ignorant of Bacon's works, and Dr Fowler explains his silence with regard to them on three grounds: (1) that Bacon's reputation was so well established that any definite mention was unnecessary, (2) that it was not customary at the time to acknowledge indebtedness to contemporary and recent writers, and (3) that Newton's genius was so strongly mathematical (whereas Bacon's great weakness was in mathematics) that he had no special reason to refer to Bacon's experimental principles.

If the foregoing examples are held sufficient to establish the influence of Bacon on the intellectual development of his immediate successors, it follows that the whole trend of typically English thought, not only in natural science, but also in mental, moral and political philosophy, is the logical fulfilment of Baconian principles. He argued against the tyranny of authority, the vagaries of unfettered imagination and the academic aims of unpractical dialectic; the vital energy and the reasoned optimism of his language entirely outweigh the fact that his contributions to the stock of actual scientific knowledge were practically

inconsiderable. It may be freely admitted that in the domain of logic there is nothing in the *Organum* that has not been more instructively analysed either by Aristotle himself or in modern works; at the same time, there is probably no work which is a better and more stimulating introduction to logical study. Its terse, epigrammatic phrases sink into the fibre of the mind, and are a healthy warning against crude, immature generalization.

While, therefore, it is a profound mistake to regard Bacon as a great constructive philosopher, or even as a lonely pioneer of modern thought, it is quite unfair to speak of him as a trifler. His great work consists in the fact that he summed up the faults which the widening of knowledge had disclosed in medieval thought, and in this sense he stands high among those who were in many parts of 16th-century Europe striving towards a new intellectual activity.

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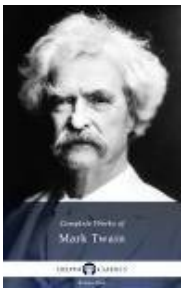

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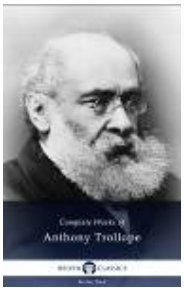

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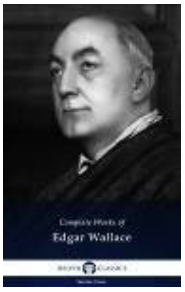

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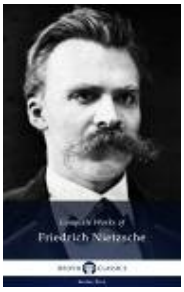

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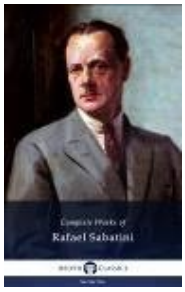
Samuel Butler
Samuel Richardson
Sir Thomas Malory
Thomas Carlyle
William Harrison Ainsworth

William Dean Howells

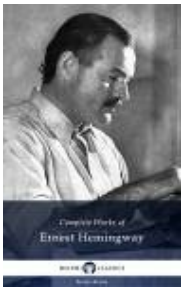


William Morris

Series Six

Anthony Hope
Aphra Behn
Arthur Morrison
Baroness Emma Orczy
Captain Mayne Reid
Charlotte M. Yonge
Charlotte Perkins Gilman
E. W. Hornung
Ellen Wood
Frances Burney
Frank Norris
Frank R. Stockton
Hall Caine
Horace Walpole
One Thousand and One Nights
R. Austin Freeman
Rafael Sabatini
Saki
Samuel Pepys
Sir Issac Newton
Stanley J. Weyman
Thomas De Quincey
Thomas Middleton
Voltaire

William Hazlitt

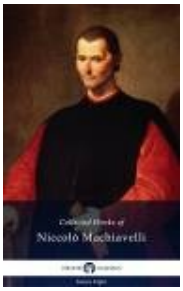


William Hope Hodgson

Series Seven

Adam Smith
Benjamin Disraeli
Confucius
David Hume
E. M. Delafield
E. Phillips Oppenheim
Edmund Burke
Ernest Hemingway
Frances Trollope
Galileo Galilei
Guy Boothby
Hans Christian Andersen
Ian Fleming
Immanuel Kant
Karl Marx
Kenneth Grahame
Lytton Strachey
Mary Wollstonecraft
Michel de Montaigne
René Descartes
Richard Marsh
Sax Rohmer
Sir Richard Burton
Talbot Mundy

Thomas Babington Macaulay

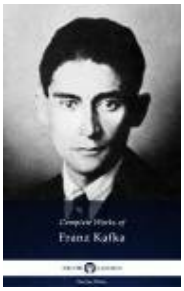


W. W. Jacobs

Series Eight

Anna Katharine Green
Arthur Schopenhauer
The Brothers Grimm
C. S. Lewis
Charles and Mary Lamb
Elizabeth von Arnim
Ernest Bramah
Francis Bacon
Gilbert and Sullivan
Grant Allen
Henryk Sienkiewicz
Hugh Walpole
Jean-Jacques Rousseau
John Locke
John Muir
Joseph Addison
Lafcadio Hearn
Lord Dunsany
Marie Corelli
Niccolò Machiavelli
Ouida
Richard Brinsley Sheridan
Sigmund Freud
Theodore Dreiser

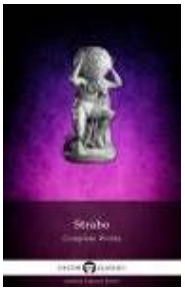
Walter Pater



W. Somerset Maugham

Series Nine

Aldous Huxley August Strindberg Booth Tarkington C. S. Forester Erasmus Eugene Sue Fergus Hume Franz Kafka Gertrude Stein Giovanni Boccaccio Izaak Walton J. M. Synge Johanna Spyri John Galt Maurice Leblanc Max Brand Molière Norse Sagas R. D. Blackmore R. S. Surtees Sir Thomas More Stephen Leacock The Harvard Classics Thomas Love Peacock Thomas Paine William James



Ancient Classics

Achilles Tatius
Aeschylus
Ammianus Marcellinus
Apollodorus
Appian
Apuleius
Apollonius of Rhodes
Aristophanes
Aristotle
Arrian
Athenaeus
Augustine
Aulus Gellius
Bede
Cassius Dio
Cato

Catullus
Cicero
Claudian
Clement of Alexandria
Cornelius Nepos
Demosthenes
Dio Chrysostom
Diodorus Siculus
Dionysius of Halicarnassus
Diogenes Laërtius
Euripides
Frontius
Herodotus
Hesiod
Hippocrates
Homer
Horace
Isocrates
Josephus
Julian
Julius Caesar
Juvenal
Livy
Longus
Lucan
Lucian
Lucretius
Marcus Aurelius
Martial
Nonnus
Ovid
Pausanias
Petronius
Pindar
Plato
Plautus
Pliny the Elder
Pliny the Younger
Plotinus
Plutarch

Polybius
Procopius
Propertius
Quintus Curtius Rufus
Quintus Smyrnaeus
Sallust
Sappho
Seneca the Younger
Septuagint
Sextus Empiricus
Sidonius
Sophocles
Statius
Strabo
Suetonius
Tacitus
Terence
Theocritus
Thucydides
Tibullus
Varro
Virgil
Xenophon

Delphi Poets Series

A. E. Housman
Alexander Pope
Alfred, Lord Tennyson
Algernon Charles Swinburne
Andrew Marvell
Beowulf
Charlotte Smith
Christina Rossetti
D. H Lawrence (poetry)

Dante Alighieri (English)
Dante Gabriel Rossetti
Delphi Poetry Anthology
Edgar Allan Poe (poetry)
Edmund Spenser
Edward Lear
Edward Thomas
Edwin Arlington Robinson
Ella Wheeler Wilcox
Elizabeth Barrett Browning
Emily Dickinson
Epic of Gilgamesh
Ezra Pound
Friedrich Schiller (English)
George Chapman
George Herbert
Gerard Manley Hopkins
Gertrude Stein
Hafez
Heinrich Heine
Henry Howard, Earl of Surrey
Henry Wadsworth Longfellow
Isaac Rosenberg
James Russell Lowell
Johan Ludvig Runeberg
John Clare
John Donne
John Dryden
John Gower
John Keats
John Milton
John Wilmot, Earl of Rochester
Joseph Addison
Kahlil Gibran
Leigh Hunt
Lord Byron
Ludovico Ariosto
Luís de Camões
Matthew Arnold
Matthew Prior

Michael Drayton
Nikolai Nekrasov
Paul Laurence Dunbar
Percy Bysshe Shelley
Petrarch
Ralph Waldo Emerson
Robert Browning
Robert Burns
Robert Frost
Robert Southey
Rumi
Rupert Brooke
Samuel Taylor Coleridge
Sir Philip Sidney
Sir Thomas Wyatt
Sir Walter Raleigh
Thomas Chatterton
Thomas Gray
Thomas Hardy (poetry)
Thomas Hood
Thomas Moore
Torquato Tasso
T. S. Eliot
W. B. Yeats
Walter Savage Landor
Walt Whitman
Wilfred Owen
William Blake
William Cowper
William Wordsworth

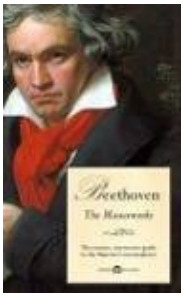
Masters of Art

Albrecht Dürer
Amedeo Modigliani

Artemisia Gentileschi
Camille Pissarro
Canaletto
Caravaggio
Caspar David Friedrich
Claude Lorrain
Claude Monet
Dante Gabriel Rossetti
Diego Velázquez
Donatello
Edgar Degas
Édouard Manet
Edvard Munch
El Greco
Eugène Delacroix
Francisco Goya
Giotto
Giovanni Bellini
Gustave Courbet
Gustav Klimt
Hieronymus Bosch
Jacques-Louis David
James Abbott McNeill Whistler
J. M. W. Turner
Johannes Vermeer
John Constable
Leonardo da Vinci
Michelangelo
Paul Cézanne
Paul Gauguin
Paul Klee
Peter Paul Rubens
Piero della Francesca
Pierre-Auguste Renoir
Pieter Bruegel the Elder
Sandro Botticelli
Raphael
Rembrandt van Rijn
Thomas Gainsborough
Tintoretto

Titian

Vincent van Gogh

Wassily Kandinsky 

Great Composers

Antonín Dvořák

Franz Schubert

Johann Sebastian Bach

Joseph Haydn

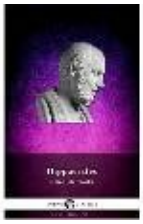
Ludwig van Beethoven

Piotr Illitch Tchaïkovsky

Richard Wagner

Wolfgang Amadeus Mozart

Alphabetical List of Titles



A. E. Housman
Achilles Tatius
Adam Smith
Aeschylus
Albrecht Dürer
Aldous Huxley
Alexander Pope
Alexander Pushkin
Alexandre Dumas (English) Alfred, Lord Tennyson Algernon Blackwood
Algernon Charles Swinburne Ambrose Bierce
Amedeo Modigliani
Ammianus Marcellinus
Anatole France
Andrew Lang
Andrew Marvell
Ann Radcliffe
Anna Katharine Green
Anthony Hope
Anthony Trollope
Anton Chekhov
Antonín Dvořák
Aphra Behn
Apollodorus
Apollonius of Rhodes
Appian
Apuleius
Aristophanes
Aristotle
Arnold Bennett
Arrian
Artemisia Gentileschi Arthur Machen

Arthur Morrison
Arthur Schopenhauer
Athenaeus
August Strindberg
Augustine
Aulus Gellius
Baroness Emma Orczy
Beatrix Potter
Beaumont and Fletcher Bede
Ben Jonson
Benjamin Disraeli
Beowulf
Booth Tarkington
Bram Stoker
Bret Harte
C. S. Forester
C. S. Lewis
Camille Pissarro
Canaletto
Captain Frederick Marryat Captain Mayne Reid
Caravaggio
Caspar David Friedrich Cassius Dio
Cato
Catullus
Charles and Mary Lamb Charles Darwin
Charles Dickens
Charles Kingsley
Charles Lever
Charles Reade
Charlotte M. Yonge
Charlotte Perkins Gilman Charlotte Smith
Christina Rossetti
Christopher Marlowe
Cicero
Claude Lorrain
Claude Monet
Claudian
Clement of Alexandria Confucius
Cornelius Nepos

D. H Lawrence (poetry) D.H. Lawrence
Daniel Defoe
Dante Alighieri (English) Dante Gabriel Rossetti Dante Gabriel Rossetti David Hume
Delphi Poetry Anthology Demosthenes
Dickensiana Volume I
Diego Velázquez
Dio Chrysostom
Diodorus Siculus
Diogenes Laërtius
Dionysius of Halicarnassus Donatello
E. F. Benson
E. M. Delafield
E. M. Forster
E. Nesbit
E. Phillips Oppenheim E. W. Hornung
Edgar Allan Poe
Edgar Allan Poe (poetry) Edgar Degas
Edgar Rice Burroughs
Edgar Wallace
Edith Wharton
Edmund Burke
Edmund Spenser
Édouard Manet
Edvard Munch
Edward Bulwer-Lytton
Edward Gibbon
Edward Lear
Edward Thomas
Edwin Arlington Robinson El Greco
Elizabeth Barrett Browning Elizabeth Gaskell
Elizabeth von Arnim
Ella Wheeler Wilcox
Ellen Wood
Émile Zola
Emily Dickinson
Epic of Gilgamesh
Erasmus
Ernest Bramah

Ernest Hemingway
Eugène Delacroix
Eugene Sue
Euripides
Ezra Pound
F. Scott Fitzgerald
Fergus Hume
Ford Madox Ford
Frances Burney
Frances Hodgson Burnett Frances Trollope
Francis Bacon
Francisco Goya
Frank Norris
Frank R. Stockton
Franz Kafka
Franz Schubert
Friedrich Nietzsche
Friedrich Schiller (English) Frontius
Fyodor Dostoyevsky
G. A. Henty
G. K. Chesterton
Galileo Galilei
Geoffrey Chaucer
George Bernard Shaw
George Chapman
George Eliot
George Gissing
George Herbert
George MacDonald
George Meredith
George Orwell
Gerard Manley Hopkins Gertrude Stein
Gertrude Stein
Gilbert and Sullivan
Giotto
Giovanni Bellini
Giovanni Boccaccio
Grant Allen
Gustav Klimt

Gustave Courbet

Gustave Flaubert (English) Guy Boothby

Guy de Maupassant

H. G. Wells

H. P. Lovecraft

H. Rider Haggard

Hafez

Hall Caine

Hans Christian Andersen Harriet Beecher Stowe Heinrich Heine

Henrik Ibsen

Henry David Thoreau

Henry Fielding

Henry Howard, Earl of Surrey Henry James

Henry Wadsworth Longfellow Henryk Sienkiewicz

Herman Melville

Herodotus

Hesiod

Hieronymus Bosch

Hilaire Belloc

Hippocrates

Homer

Honoré de Balzac (English) Horace

Horace Walpole

Hugh Walpole

Ian Fleming

Immanuel Kant

Isaac Rosenberg

Isocrates

Ivan Turgenev

Izaak Walton

J. M. Barrie

J. M. Synge

J. M. W. Turner

J. W. von Goethe (English) Jack London

Jacques-Louis David

James Abbott McNeill Whistler James Fenimore Cooper James Joyce

James Russell Lowell

Jane Austen

Jean-Jacques Rousseau Jerome K. Jerome

Johan Ludvig Runeberg Johann Sebastian Bach Johanna Spyri

Johannes Vermeer

John Buchan

John Bunyan

John Clare

John Constable

John Donne

John Dryden

John Galsworthy

John Galt

John Gower

John Keats

John Locke

John Milton

John Muir

John Ruskin

John Webster

John Wilmot, Earl of Rochester Jonathan Swift

Joseph Addison

Joseph Addison

Joseph Conrad

Joseph Haydn

Josephus

Jules Verne

Julian

Julius Caesar

Juvenal

Kahlil Gibran

Karl Marx

Kate Chopin

Katherine Mansfield

Kenneth Grahame

L. Frank Baum

L. M. Montgomery

Lafcadio Hearn

Laurence Sterne

Leigh Hunt

Leo Tolstoy

Leonardo da Vinci
Lewis Carroll
Livy
Longus
Lord Byron
Lord Dunsany
Louisa May Alcott
Lucan
Lucian
Lucretius
Ludovico Ariosto
Ludwig van Beethoven
Luís de Camões
Lytton Strachey
M. E. Braddon
M. R. James
Marcel Proust (English) Marcus Aurelius
Margaret Oliphant
Maria Edgeworth
Marie Corelli
Mark Twain
Martial
Mary Shelley
Mary Wollstonecraft
Matthew Arnold
Matthew Prior
Maurice Leblanc
Max Brand
Maxim Gorky
Michael Drayton
Michel de Montaigne
Michelangelo
Miguel de Cervantes
Molière
Nathaniel Hawthorne
Niccolò Machiavelli
Nikolai Gogol
Nikolai Nekrasov
Nonnus
Norse Sagas

O. Henry
Oliver Goldsmith
One Thousand and One Nights Oscar Wilde
Ouida
Ovid
Paul Cézanne
Paul Gauguin
Paul Klee
Paul Laurence Dunbar
Pausanias
Percy Bysshe Shelley
Peter Paul Rubens
Petrarch
Petronius
Piero della Francesca Pierre-Auguste Renoir Pieter Bruegel the Elder Pindar
Piotr Illitch Tchaïkovsky Plato
Plautus
Pliny the Elder
Pliny the Younger
Plotinus
Plutarch
Polybius
Procopius
Propertius
Quintus Curtius Rufus Quintus Smyrnaeus
R. Austin Freeman
R. D. Blackmore
R. M. Ballantyne
R. S. Surtees
Radclyffe Hall
Rafael Sabatini
Ralph Waldo Emerson
Raphael
Rembrandt van Rijn
René Descartes
Richard Brinsley Sheridan Richard Marsh
Richard Wagner
Robert Browning
Robert Burns

Robert E. Howard
Robert Frost
Robert Louis Stevenson Robert Southey
Robert W. Chambers
Rudyard Kipling
Rumi
Rupert Brooke
Saki
Sallust
Samuel Butler
Samuel Johnson
Samuel Pepys
Samuel Richardson
Samuel Taylor Coleridge Sandro Botticelli
Sappho
Sax Rohmer
Seneca the Younger
Septuagint
Sextus Empiricus
Sheridan Le Fanu
Sidonius
Sigmund Freud
Sir Arthur Conan Doyle Sir Issac Newton
Sir Philip Sidney
Sir Richard Burton
Sir Thomas Malory
Sir Thomas More
Sir Thomas Wyatt
Sir Walter Raleigh
Sir Walter Scott
Sophocles
Stanley J. Weyman
Statius
Stendhal
Stephen Crane
Stephen Leacock
Strabo
Suetonius
T. S. Eliot

Tacitus
Talbot Mundy
Terence
The Brontës
The Brothers Grimm
The Harvard Classics
Theocritus
Theodore Dreiser
Thomas Babington Macaulay Thomas Carlyle
Thomas Chatterton
Thomas De Quincey
Thomas Gainsborough
Thomas Gray
Thomas Hardy
Thomas Hardy (poetry) Thomas Hood
Thomas Love Peacock
Thomas Middleton
Thomas Moore
Thomas Paine
Thucydides
Tibullus
Tintoretto
Titian
Tobias Smollett
Torquato Tasso
Varro
Victor Hugo
Vincent van Gogh
Virgil
Virginia Woolf
Voltaire
W. B. Yeats
W. Somerset Maugham
W. W. Jacobs
Walt Whitman
Walter Pater
Walter Savage Landor
Washington Irving
Wassily Kandinsky
Wilfred Owen

Wilkie Collins
William Blake
William Cowper
William Dean Howells
William Harrison Ainsworth William Hazlitt
William Hope Hodgson
William James
William Makepeace Thackeray William Morris
William Shakespeare
William Wordsworth
Wolfgang Amadeus Mozart Xenophon
Zane Grey

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St. Michael's Church, St. Albans, Hertfordshire — Bacon's final resting place

The monument to Bacon close to his grave